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JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

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THE SIXTY-NINTH ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN NEW ORLEANS, LA., SEPTEMBER, 1921

The 1921 meetings of the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will also be held in New Orleans during Convention Week

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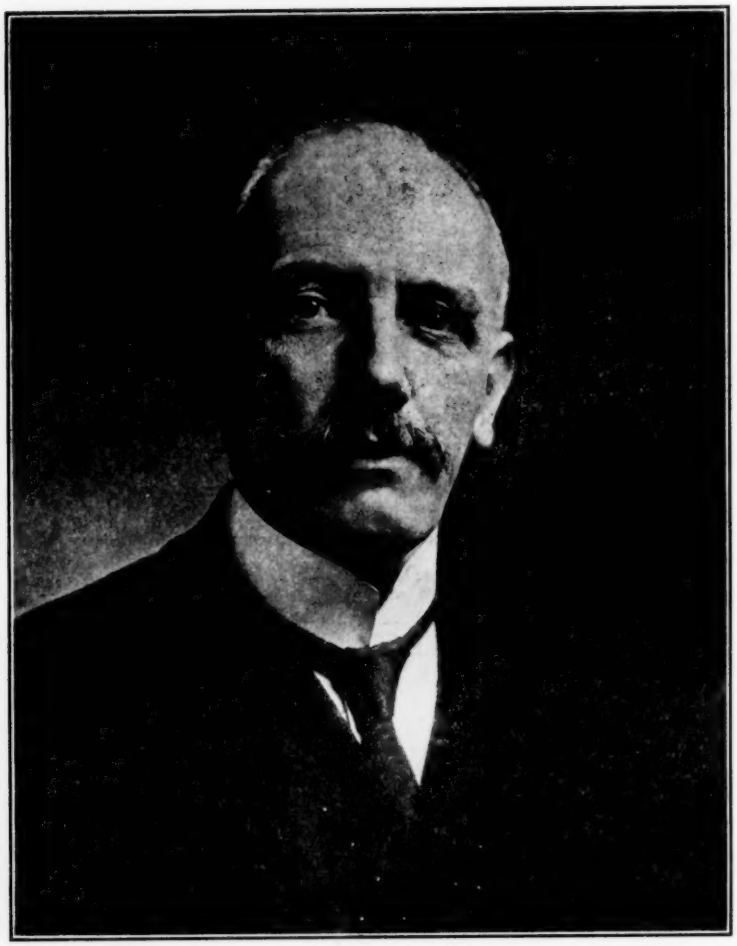
HENRY GEORGE GREENISH

LONDON, ENGLAND

President British Pharmaceutical Society, 1880 and 1881

Elected Honorary Member of the American Pharmaceutical Association in 1913



HENRY G. GREENISH

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. IX JULY 1920 NO. 7

HENRY GEORGE GREENISH.

Henry George Greenish, the son of Thomas Greenish, was born in London sixty-five years ago. Studious application in Marylebone Grammar School gained for him fundamental knowledge that he utilized to fullest extent in the progressive acquirement of the vast fund now at his command, and the grant of the Basil Wood Scholarship.

He was apprenticed to his father, and his entrance to pharmaceutical studies is marked by the winning of a Bell Scholarship in 1875; when he concluded his student years at the School of Pharmacy he was awarded silver medals for chemistry, practical chemistry, botany, pharmacy, materia medica, and the Society's silver medal. Preceding his graduation he was for a session demonstrator in the chemical laboratory of the School; thereafter his studies were continued at the University of Dorpat and in the University of Vienna. Since 1890, Professor Greenish has been a member of the faculty of the School of Pharmacy, first as lecturer on materia medica, then he was advanced to full professorship and is now Professor of Pharmaceutics, and Dean of his Alma Mater.

He served the British Pharmaceutical Society as Treasurer for several years and was twice elected its President, 1880 and 1881. His connection with the Revision Committee of the British Pharmacopoeia dates back to 1898, when he was appointed member of the Committee to revise the Addendum; later he was elected Secretary of the British Pharmaceutical Society's Committee for the preparation of the B. P., and in 1914 Secretary of the Committee of Reference in Pharmacy for the British Pharmacopoeia, of which he is the Joint Editor. He took an active part in the preparation of the first edition of the British Pharmaceutical Codex, published in 1911.

As an author and contributor to pharmaceutical and other related scientific publications Professor Greenish is well and favorably known to A. Ph. A. members, also as collaborator with the late Prof. Eugene Collin of an "Anatomical Atlas of Vegetable Powders," and as the author of a comprehensive and authoritative work on "The Microscopical Examination of Foods and Drugs." His many contributions to pharmaceutical literature have distinctive value, and to list them would extend beyond the limits of the page assigned for this brief sketch. In recognition of the worth of his work many societies, both at home and abroad, have elected him to honorary membership and expressed their esteem by other

awards. During the war he assisted in the encouragement and direction of the cultivation of medicinal plants. He is a photographic expert, in the artistic as well as the technical sense.

Professor Greenish was the Hanbury Medalist in 1917. Eighteen awards have been made of this Memorial, which was instituted in 1882; the subject of this sketch is one of the six British scientists thus honored. He was elected an honorary member of the American Pharmaceutical Association in 1913. E. G. E.

A NEW LAW COVERING THE SALE OF DISTILLED SPIRITS AND WINES FOR MEDICINAL PURPOSES ENACTED IN NEW JERSEY.

At this year's session of the New Jersey legislature the following law was enacted and, having received the approval of the Governor, will become operative on July 4th.

AN ACT to restrict the sale at retail of distilled spirits and wines for medicinal purposes to bona fide prescriptions and to define the prescribing and dispensing of these as in performance of professional duty and not in violation of prohibition enactments.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. On and after the passage of this act, it shall not be lawful for any druggist, except a pharmacist registered as such in accordance with the law of this State and engaged at the time in the actual practice of pharmacy, to sell at retail distilled spirits and wines and the sale shall be made only on a bona fide prescription written by a licensed practitioner of medicine engaged at the time in the practice of his medical profession. Distilled spirits and wines may be prescribed by such medical practitioner when in good faith he believes that the use of alcoholic liquors as a medicine is indicated and only after a personal physical examination of the patient or after consultation with another practitioner who has made a personal physical examination of the patient, and the prescription shall be written in duplicate, the prescriber retaining one copy, and there shall be written thereon the name and address of the patient for whom prescribed, and the name and address of the prescriber, and the prescription shall not be filled more than once, and there shall not be prescribed for the same patient for internal administration more than one pint of distilled spirits within any period of ten days, and the liquor prescribed can be consumed only by the patient named in the prescription, and the pharmacist filling the prescription shall preserve it for at least two years on a separate file kept for prescriptions for distilled spirits and wines, and all such files and records shall be open at all times to the inspection of any authorized officer of the law.

2. The prescribing and dispensing of alcoholic liquors on bona fide prescriptions in accordance with the provisions of this act shall be deemed and is hereby defined as in performance of the professional duty of the medical practitioner and the pharmacist, and the pharmacist shall not by reason of such professional duty be classified as a dealer in alcoholic beverages nor shall he be subject to the license fees that are exacted of dealers in alcoholic beverages, nor shall the dispensing of alcoholic liquors in the discharge of his professional service be construed as violating the provisions of the enactments of this State or of any political subdivision therof enacted for the purpose of restricting and controlling the sale and use of alcoholic liquors as beverages and commonly spoken of as local option and prohibition laws; *provided*, that nothing in this act shall be construed as preventing the sale and use of alcohol when properly medicated and sold in accordance with the regulations of the Bureau of Internal Revenue of the Treasury Department of the United States nor with the manufacture, sale and use of denatured alcohol, nor with manufacture, sale and use of wines for sacramental and like religious rites in accordance with the Federal statutes.

3. Any person violating any of the provisions of section one of this act shall be guilty of a misdemeanor and upon conviction shall be subject to a fine of not more than one hundred dollars, and any medical practitioner or any pharmacist who is convicted more than once of violating the provisions thereof may have his license to practice in this State revoked.

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

SECTION ON COMMERCIAL INTERESTS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

THE programs of the Section on Commercial Interests for the past two years have been of the highest order and it does not seem possible to improve upon them as to character and quality. The interest that this Section has created among those in attendance bespeaks for it a "place in the sun" of sectional meetings.

There is no thought of "letting up" the pace now set for the work of this section. Every listener to men of big jobs, high ideals, and broad experiences is helped wonderfully in whatever his task at home may be. We have in mind maintaining this same high order of program at the next meeting. We believe that in dealing with the fundamentals of law, business and ethics, the minor details will care for themselves. The past two Chairmen of this Section certainly selected "big timber" in making up their programs and the fine response they had will serve as an inspiration and guide in future sectional meetings.

Commercial pharmacy as a subject for study in schools of pharmacy is here to stay and must be developed according to high educational plans and should be made a course that will direct the students' thoughts into channels of ethics, service, and responsibility as pertains to the business and profession of pharmacy.

CHAS. O. LEE.

PHARMACEUTICAL RESEARCH SHOULD HAVE A PLACE IN THE ORGANIZATION OF THE NATIONAL RESEARCH COUNCIL.

IN a paper read before the Pennsylvania State Pharmaceutical Association Dr. H. V. Arny interestingly presented and commented on the research work of pharmacists, and a considerable part of the rehearsal is concerned with that of American pharmacists, recorded in various pharmaceutical publications, in the Proceedings and the Journal of the American Pharmaceutical Association.

The paper has particular value at this time when the interest in research is developing and attracting the attention of those who willingly give and are in position to provide large sums of money, if the results justify the endowments. The donors have vision and, doubtless, the splendid work accomplished under the direction of the National Research Council during the war has been an influential and persuasive factor for enlisting their interest. Those who attended the Washington meeting of the American Pharmaceutical Association had the opportunity of learning about the organization of the National Research Council, so ably presented in an address by Dr. C. E. McClung, and responsive thereto, Prof. J.

U. Lloyd shed light upon the possibilities in pharmaceutical research. The importance of pharmacy has not been specifically recognized in these promotions, but the spirit which underlies research was conveyed in the remarks of the first speaker and indicated that the plan of organization was so comprehensive that without pharmaceutical research the organization would be incomplete. In fact, he was hopeful that steps would be taken to have representation for pharmacy in one or the other of the departments, and that the importance would be impressed by the work, resulting later in specific recognition for it.

Research has about as many definitions as there are classes of workers in it; while, undoubtedly, the term is used in too broad a sense by many there are others who apply a very narrow meaning. In an address delivered before the Association of American Universities last November, printed in the July issue of the *Scientific Monthly*, Dr. James Rowland Angell stated that it is very easy to magnify the distinction between research in pure science and research in applied science, "while the motives inspiring the work may be appreciably different the technique of the procedure in the two cases may be all but indistinguishable and either variety of research, if it is to survive the test of scientific criticism, must be based upon absolutely fundamental scientific principles. In the last analysis, the difference reduces almost wholly to the psychological question of motivation. The man working in the field of applied science has before him a concrete specific issue involving some immediate practical exigency. The worker in pure science has quite as definite a specific problem, but it is not one which has arisen out of, nor which necessarily exists in obvious relation to, an immediate demand. Beyond this I doubt if significant differences exist."

A number of the sciences underlie pharmacy and exemplify an important factor in research, namely that of scientific coöperation. E. G. E.

A HALF CENTURY OF SERVICE.

THE New Jersey State Pharmaceutical Association has completed its first fifty years of organized effort, and in commemoration of the anniversary has published an historical souvenir of over 100 pages containing half-tone reproductions of all of its presidents, biographical sketches of them, code of ethics, etc. Considerable time and labor were expended in the preparation of this book, and in securing the necessary data and photographs. The object of this writing, aside from making a deserved reference, is to suggest to other associations approaching the half-century period that their records should now be searched preparatory to a similar compilation. The activities of those to be remembered change during fifty years and many permanently lay down the pestle. It is not surprising that only few of the Charter Members remain among the living, for the addition of fifty years to that of their ages at the time when they formed the organization would make most of them centenarians.

A striking comment in the foreword by Prof. J. U. Lloyd has timely interest; he quotes from the third paragraph of the Code of Ethics, as follows:

"Recognizing the value of alcohol as a therapeutic agent, and the propriety of its being dispensed as such by pharmacists, yet deploring the widespread evil resulting from its intemperate use in its hundred insidious forms, we condemn any attempt to make it a prominent feature of our business as unprofessional, and we denounce the loose practice of allowing it to be used on the premises in any shape as a beverage, as degrading; and we urge upon pharmacists the duty of exercising at all times a conscientious care in dispensing a drug liable to such dangerous abuse."

Cervantes said: "History is the depository of great actions, the witness of what is past, the example and instructor of the present and monitor to the future."

E. G. E.

GIVE WHILE YOU LIVE.

THIS is an appeal to the alumni of all pharmaceutical schools for a deeper interest in the affairs of the institutions which gave them an opportunity to make a living and be of service in their respective communities. Now, as never before, the need of endowments for educational institutions is recognized. All pharmacists who have any interest in progress and the development of their city and state have contributed in one way or another thereto. Otherwise, they could not have consideration from their fellow-citizens; however, comparatively few pharmacists give much thought to the schools which had a large part in their success.

Except perhaps in the larger cities, census returns are watched with interest; the feeling engendered in competing towns for rank evidences the enthusiasm, love and loyalty of the citizens, and among them are pharmacists. This rivalry extends to educational institutions, manufacturing plants and municipal progress of every kind. It should obtain in a greater degree among pharmacists in relation to pharmacy schools.

Emerson said that "What you are speaks so loud that I cannot hear what you say." Profession means very little unless actions proclaim its sincerity. Whatever is given to one institution, whatever accomplishments are made possible for it, gives encouragement for other promotions and to those of other schools. The alumni really profit most, and with them pharmacy, when financial aid is given to the schools of pharmacy that will enable them to keep abreast with modern progress. This applies with equal force to all schools, whether affiliated or attached to universities or not. The former need the support of citizens, and among them are pharmacists; the latter are entitled to that of university men, for their services are linked in one way or another; coöperation is the thing, and the advancement of pharmacy for greater and better service is the purpose of this note.

E. G. E.

CODES OF BOTANICAL NOMENCLATURE IN THE UNITED STATES PHARMACOPOEIA.

BY H. H. RUSBY.

Two codes of botanical nomenclature are commonly spoken of, the so-called American Code, and the so-called International Code. Both names are misleading. The former is not American, because it emanated with a group of especially eminent botanists equally representative of Great Britain, Germany and France. It has come to be called American because it is followed in all branches of the U. S. Federal service, and in most of the States—the principal reason why the U. S. P. should not depart from it. It is also followed by an overwhelming majority of the individual botanists of the United States. Those who do not employ it in its entirety, apply its principles as to a part of the name.

The International Code is misnamed; first, because it is not a code in the proper sense of the word. The first named is a code, because it is based on a governing principle, namely, that priority of publication determines the name of a group or a species. This principle is as fully recognized by the authors of the International Code as by others, but they seek to avoid inconvenience in usage by deviating from the message in those cases where conformity would involve the change of a large number of names in common use. Even in such cases, they do not object to assigning the correct names in an authoritative list, but hold that public convenience would be subserved by treating such names as *excepta* in common use, the incorrect names being then employed, by common consent. For example, a genus of orchids was dedicated to the great scientist under the name *Humboldtia*. Subsequently, through ignorance or perversity, most of the hundred or more species have been described under the name *Pleurothallis*. There are very few botanists who do not admit that scientific accuracy in identification requires that these should be reassembled under the proper name, but that some authoritative and representative international body should make a list of *excepta*, comprising those cases in which the change would cause great inconvenience, and should authorize the current use, in botanical literature, of the incorrect names that have come into common use. So far as I am aware, I was the first to make a definite proposition that this should be done, so that I take a peculiar interest in the proceedings by which the plan was supposed to be executed. Since a large part—much the larger part—of the complete list of plant names, followed the code, the others being merely exceptions in usage, it does not seem proper to call such an international list a "code."

It was assumed that this list of exceptions would be formed by an impartial representative body, and this in conformity with the principle under which the work was done. As a matter of fact, it was done in Vienna by a packed convention, nearly all of the members being Pan-Germans, and it was executed on a thoroughly non-international basis, and in disregard of the principles that were supposed to govern. This actually went so far that the incorrect name was selected in cases where there was but one species in a genus, the only consideration being that Pan-German interests should be conserved. It is quite impossible to substantiate the claim that the work was international in the sense that it was the work of, or had the approval of, the nations that are interested. It would be a

strange proceeding for Americans to sanction officially a procedure so opposed to the spirit of scientific sincerity.

So far as our Pharmacopoeia is concerned, there is no ground whatever for seceding from the method of our National Museum, Bureaus of Plant and Animal Industry, Smithsonian and Carnegie Institutions, Department of Agriculture and other National bodies, and from the code employed in all the vast literature of the Federal Government. Indeed, to do so would be to frustrate the object for which the list of *excepta* was formed. That object was to further convenience by avoiding the necessity for making changes in current usage. To introduce changes in the names of the Pharmacopoeia to which we have become accustomed would certainly promote inconvenience, and such inconvenience would not have the justification of being incurred in the interest of principle.

POPULAR NAMES OF CRUDE DRUGS.*

BY ARNO VIEHOEVER.

It is not the intention to discuss the merit of popular names for crude drugs. No one familiar with the subject will deny the need for a common name, in addition to or substitution for a scientific name, which is often necessarily highly technical and too involved to be readily understood or remembered in common trade.

The purpose of this note is simply to advocate greater care in the use of common names. Where the product is already well known, even by a name which is obviously unsatisfactory, the desirability for another, though proper name, might not be so apparent. In cases, however, where new products are introduced, it is essential that some thought be given to the proper common, as well as scientific, name. A name may already be attached to the product, given to it by some one qualified or not qualified. Discrimination must therefore be used in the choice, and great care in the creation of a name, if no suitable trade name is available.

The common drug names used by the trade and adopted in the Pharmacopoeia and National Formulary probably represent sufficient examples for the very varied bases underlying the selection of common drug names. Further examples may readily be found in pharmaceutical dispensatories and in books on florae[1] and on common names.[2,3] The general subject of common plant names is interestingly discussed in recent articles in *Science*[4] and elsewhere.[5]

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* Read before Scientific Section, A. Ph. A., City of Washington meeting, 1920.

[1] Britton and Brown, "Illustrated Flora of the Northern States and Canada," Vol. I, II, III (1913).

[2] Lyons, A. B., "Plant Names Scientific and Popular," 1907.

[3] Zimmer, George Frederick, "A Popular Dictionary of Botanical Names and Terms," 1913; Miller, William, "A Dictionary of English Names of Plants," 1884; Schelle, Solomon, *Wörterbuch der Botanischen Kuntsprache*, 1886.

[4] Adams, J., "The Popular Names of North American Plants," *Science*, 45, 114–115, 1917; Bigelow, M. A., "Popular Names of Plants," *Science*, 46, 16–17, 1917

[5] Chase, Agnes, "Some Causes of Confusion in Plant Names," *Journal of Forestry*, 159–162, 1919.

VARIED BASES OF COMMON NAMES OF CRUDE DRUGS.

Some are identical with the scientific name, as far as either the genus or the species name is concerned. Adoption of genus name: Acacia (*Acacia senegal* Willd.), arnica (*Arnica montana* L.), cannabis (*Cannabis sativa* L.), colchicum (*Colchicum autumnale* L.), lobelia (*Lobelia inflata* L.), lycopodium (*Lycopodium clavatum* L.), strophanthus (*Strophanthus kombe* Oliver); and of species name: condurango (*Marsdenia condurango* Nichols), stramonium (*Datura stramonium* L.).

Some represent modifications of either the genus name: aconite (*Aconitum napellus* L.), valerian (*Valeriana officinalis* L.); or species name: asafetida (*Ferula asafoetida* (Bunge) Regel), chamomile (*Matricaria chamomilla* L.), cubeb (*Piper cubeba* L. f.).

Others represent more marked changes of the scientific name: with regard to the genus, fennel (*Foeniculum vulgare* Miller), licorice (*Glycyrrhiza glabra* L.), pepper (*Piper nigrum* L.); with regard to the species: scammony (*Convolvulus scammonia* L.); or with regard to both genus and species: caraway (*Carum carvi* L.), peppermint (*Mentha piperita* Smith).

It is conceded in this discussion that some of the scientific names have been derived from the common native or collector's names, as in the case of ipecac, which served as a basis for both the scientific and trade name, while, with regard to collector's names, the reverse is true.

There are still other common names for crude drugs which have no apparent connection with the scientific name, and these may be identical with the native name, such as pipsissewa (*Chimaphila umbellata* (L.) Nutt.), wahoo (*Euonymus atropurpureus* Jacq.), squaw-root (*Conopholis americana* (L. f.) Wallr., or *Caulophyllum thalictroides* (L.) M.), kava-kava (*Piper methysticum* Forst.). Or they may be based wholly or partly on geogtaphical origin, the terms designating the valley, hill, town, or shipping port, country or hemisphere where the particular drug originated: Peruvian bark, the common name for cinchona, originating in the mountainous regions of Peru, Bolivia, and Columbia; jalap, first found near the Mexican town of Jalappa, a name now serving for the product obtained from *Exogonium purga* (Wend.) Bentham. Lily-of-the-valley, as the common name for *Convallaria majalis* L., may also be mentioned here.

Common names may have been derived from physical characters, either of the drug itself or of conspicuous parts of the drug plant, as in the case of Shepherd's purse (*Bursa Bursapastoris* (L.) Brit.), referring to the purse-like shape of the pods and the rattling of the seeds; white lady's slipper (*Cypripedium candidum* Willd.), referring to the form of the flower; bladderwrack (*Fucus vesiculosus* L.); star grass (*Aletris farinosa* L.); calabar bean (*Physostigma venenosum* Balf.); nutmeg (*Myristica fragrans* Houtt.); nutgalls (*Quercus lusitanica* Lam.); and the different snakeroots, discussed later on. Conspicuous characters produced by certain chemical compounds present may determine the name: taste, bitter-sweet (*Solanum dulcamara* L.), bitter apple (*Citrullus colocynthis* (L.) Schrad.), bitter-wood (*Quassia amara* L., *Picrasma excelsa* Swz.) Planch.; smell, muskroot (*Ferula sumbul* Hook. f.); or color, bloodroot (*Sanguinaria canadensis* L.), pink root (*Spigelia marylandica* L.), golden-seal or yellow root (*Hydrastis canadensis* L.), marygold (*Alendula officinalis* L.), and blue flag (*Iris versicolor* L.), referring to the color of the flowers. Or the names may be derived from certain physiological characters:

Deadly nightshade (*Atropa belladonna* L.), cramp bark (*Viburnum opulus* L.), purging cassia (*Cathartocarpus fistula* (L.) Pers.), scurvy grass (*Cochlearia officinalis* L.), wormseed (*Artemisia pauciflora* (Ledeb.)) Weber wormwood (*Artemisia absinthium* L.).

Names also may be used that can have no definite meaning to the general trade. A product came to our attention labeled "Golden Gate Seed." The importer, who imported the product as a mustard substitute through San Francisco, evidently wanted to keep the origin and nature of the product secret, having already a market for it. Another product, offered as "Spluegen mustard," proved to be an Indian oil seed, traded by a Swiss firm with headquarters in Spluegen, Switzerland, and a branch in India.

Concerning the meaning of other terms, such as *Matico*, we are still in doubt, since the literature does not give us a satisfactory explanation of the origin. It has also been the practice in such cases, where the name used was evidently not correct, to prefix the words "so-called," but such a procedure is no solution of the difficulties.

The name "Yellow Root" for *Hydrastis* has often caused the collection of other yellow roots by inexperienced collectors. The name "Unicorn Root" (*Aletris farinosa* L.) and "False Unicorn Root" (*Chamaelirium luteum* (L.) A. Gray) for the roots of plants not very closely related, has also caused confusion and adulteration, certainly not always intentional. Numerous instances probably are known to men in the trade where the use of the name "Snake Root" in connection with drugs caused misunderstanding and mistakes. It is true that the term is often further defined, mainly by geographical terms, as Virginia snakeroot (*Aristolochia serpentaria* L.), Texas snakeroot (*Aristolochia reticulata* Nutt.), senega snakeroot or Southern senega snakeroot (*Polygala senega* L.), Canada snakeroot (*Asarum canadense* L.), Samson's snakeroot (*Dasystephana saponaria* (L.) Small), or (*Psoralea pedunculata* (Mill.) Vail.), black snakeroot (*Aristolochia serpentaria* (L.) or *Cimicifuga racemosa* (L.) Nutt.). Nevertheless, the term "snakeroot" is very indefinite and should be dropped in favor of the more definite terms already available.

The trade term "Ipecac" appears to be a well selected common name; it is an abbreviation of the species name *ipecacuanha* (*Cephaelis ipecacuanha*) (Brot.) A Rich., (*Rubiaceae*), meaning a creeping plant causing vomiting. Unfortunately, it also has been misused in applying it to other drugs which were not official. Such cases are that of "White or Wild Ipecac" (*Euphorbia ipecacuanha* L.), a domestic plant belonging to the *Euphorbiaceae*, and the one of another "White Ipecac" (*Ionidium ipecacuanha* Vent.), indigenous to Brazil, being devoid of any alkaloid and belonging to still another family, namely, the *Violaceae*.

The terms "caraway" and "peppermint" may be considered as strikingly good combinations for trade terms.

A few rules may perhaps be stated in a suggestive way, which might prove of value in the consideration of a suitable trade term.

RULES SUGGESTED FOR SELECTING COMMON NAMES.

1. The name should preferably be derived from the scientific name, representing an abbreviation, modification or translation of the meaning of the Latin scientific name.

2. No name should be chosen which is already used for a plant or plant product distinctly different in certain respects. This rule should especially be followed in cases where these products are derived from plants not very closely related, belonging, for instance, to different genera or families.
3. Preferably the name should indicate or suggest the specific characters of the product.
4. The statement of the country of origin is often useful, although the importance has decreased with extent of cultivation.
5. The selection of a term adaptable to international use appears advisable.
6. The name should be rather short, easy to spell and remember.

DISCUSSION OF NEW TERMS.

Steps have been taken to put some of these suggestions into practice, notably in the case of Brazilian Jalap (*Piptostegia pisonis* Mart.), which has recently been imported during the shortage of the normal supplies of jalap and scammony. It is felt that this name is inadequate, if not directly misleading. Holmes[1] apparently used it first in literature, referring to it as one of the most common jalaps of Brazil. Since then the name has been used by a few other scientists, who were evidently fully aware that it was not one of the jalaps. While it belongs to the same family, *Convolvulaceae*, and probably contains a saponin, as other physiologically active plants of this family, the plant from which it is derived is *Piptostegia pisonis* Mart., while jalap, as is well known, is derived from *Exogonium purga* (Wend). Lind. The resins (alcohol extract) are evidently different in composition. We have tentatively adopted the name "Piptostegia Root,"[2] pending further study of the plant, which Farwell[3] suggests might be classified as *Operculina macrocarpum* (L.) Urban.

The name "Jalap," as has been pointed out, originated with the town Jalappa, in Mexico. The name "Mexican Scammony" has also been used recently in connection with a drug obtained from Mexico, collected near Orizaba, and derived from *Ipomoea orizabensis* (Pell.) Ledanois. It yields a resin, jalapin, though in different proportions than that occurring in scammony. This latter, however, is derived from a different plant, *Convolvulus scammonia* L., and therefore the name "Mexican Scammony Root" for *Ipomoea orizabensis* cannot be considered satisfactory.[4] Why not call it Orizaba Root, or even Orizap, a name suggesting a certain similarity to jalap? The Orizaba root and its resinous extract are without doubt of value and can afford to have their own name.

Like other *Borraginaceae*, the drug obtained from *Macrotomia cephalotes*, D. C., so-called "Syrian Alkanet," is known to contain coloring principles similar to those occurring in Alkanet, which, however, belongs to another genus, *Alkanna tinctoria* (L.) Tausch.[5] There are forty species of *Alkanna* growing in the Mediterranean region. The name "Syrian" is therefore no definite distinction, aside

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[1] Holmes, "Brazilian Jalap," *Pharm. J.*, 95, 671, 1915.

[2] Alsberg, C. L., Viehoever, A., Ewing, C. O., "Some Effects of the War upon Crude Drug Importations," J. A. PH. A., 8, 467, 1919.

[3] Farwell, Oliver Atkins, "Brazilian Jalap and Some Allied Drugs," J. A. PH. A., 7, 852–5, 1918.

[4] *Service and Regulatory Announcement. Chemistry*, 24, January 9, 1920, Item 309.

[5] Ewing, C. O., Clevenger, J. F., "So-Called Syrian Alkanet, *Macrotomia cephalotes*, D. C," J. A. PH. A., 7, 591–594, 1918.

from the fact that *Macrotomia* is a different genus. The name "Macrotomia Root" is tentatively suggested. "Macrotanet" would represent a coined name suggesting similarity to Alkanet.

Digitalis thapsi L. was imported during the war, and the Name "Spanish Digitalis" has been tentatively adopted,[1] since the drug came from Spain, where it is said to be indigenous. *Digitalis purpurea* L., however, is also grown in Spain, and the name is therefore not fully satisfactory. A name like "Digithapsis" would be more definite. As is well known, the adoption of the name "Digitalis" by the Pharmacopoeia for the official drug is restrictive and necessitates the modification of names for non-official *Digitalis* species.

Names like Austrian, Greek and Spanish Sage; Chinese, Japanese, and Indian mustard, are names which we have adopted and used,[2] since the products are all true sages or mustards and have originated in these countries, where they are still rather exclusively grown. Tori, a name for an Indian oilseed, offered as mustard, was also adopted,[3] though the modification to "torape," indicating the rape character rather than mustard, would probably be an improvement. The choice of "Chinese Colza" for a Chinese oilseed (Brassica campestris chinoleifera Viehoever), also offered in trade as a mustard, was largely based on the above suggestions.[4] It expresses the colza (*campestris*) character, intimating that it is an oil seed yielding colza oil, that it is not the common European colza, but of Chinese origin, and has, as such, distinctive qualities of its own.

CONCLUSION.

Our professional forefathers accepted the medicinal value of many drugs on hearsay, and often adopted the common name which the collectors back in the woods had given to it. They were usually satisfied with scientific names variously determined by systematists, working with dried specimens, or by botanically trained or botanically inclined travellers. There have come to us a great number of botanicals reported to be valuable for one disease or another, which have been given different common names in different localities, names too often not descriptive and not definite. We find instances where plants, evidently very closely related, have been classified in different genera, if not families, and *vice versa*, where plants have been thrown together, because characteristics observed by a superficial study suggested closer relationship than existed.

The task ahead is to utilize the broader training given to-day to botanists, chemists, pharmacologists, and especially also pharmacists, and bring about a further improvement of the science which has to do with the proper classification of our botanicals, based on floral characteristics, but preferably also on general morphological, anatomical, chemical and physiological characteristics as well. The common trade name then established on the basis of the scientific identifica-

[1] Viehoever, A, "The Pharmacognosy Laboratory, Its Activities and Aims," J. A. PH. A., 8, 721.

[2] *Service and Regulatory Announcements. Chemistry*, 23, October 9, 1918, Item 277; *Chemistry*, 14, August 18, 1915, Item 136.

[3] Alsberg, C. L., Viehoever, A., and Ewing, C. O., "Some Effects of the War upon Crude Drug Importations," J. A. PH. A., 8, 469, 1919.

[4] Viehoever, A., "Chinese Colza—A Valuable New Oilseed," *Oil Paint and Drug Reporter*, September 8, 1919, p. 53.

tion and certain rules agreed upon should do away with so many loose terms which are still in common use, or are apt to become popular by misapplication, causing confusion, mistakes, and difficulties of varying consequences.

With the extension of trade throughout the world and the distinct probability that this country will remain, as during the war, one of the main collecting and distributing centers for these botanical products, it appears essential that careful attention be given to suitable and correct trade names. Let us profit from the experience of the past and work for and agree upon names which are not only simple and acceptable to the trade, but are more generally based upon scientific classification.

PHARMACOGNOSY LABORATORY,
BUREAU OF CHEMISTRY.

OFFICIAL STANDARDS FOR BOTANICAL DRUGS.*

BY C. W. BALLARD.

Each revision of the Pharmacopoeia results in the deletion of a certain number of botanical drugs, but unfortunately these articles do not immediately pass into oblivion, in fact many of them survive commercially for several decades. Aside from the question of therapeutic value they are medicinal products for which there ought to be standards. The procedure of the last revision whereby many deleted drugs were transferred to Part II of the National Formulary is merely a temporary expedient. This practice, while of merit in that it furnishes official standards for articles not included in the Pharmacopoeia, cannot be continued indefinitely, else the Formulary will be in reality a second volume of the Pharmacopoeia and will rival the latter both in size and variety of contents. The National Formulary should be a formulary in fact as in title. It should supplement the Pharmacopoeia by establishing and standardizing formulae for the therapeutic agents listed therein. It should not be a book of standards for drugs of secondary importance. It is fitting that the American Pharmaceutical Association as an organization representing all ethical fields of pharmacy should bend its energies toward the compilation of a book for pharmacists. A National Formulary of this type would not be merely a book of formulae. It would necessarily include tests of identity, purity and assay processes where applicable to the preparations included. The many commercially important drugs and drug yielding products not included in either Pharmacopoeia or Formulary might be governed by official rulings similar in form to those published by the Bureau of Chemistry. This system of regulation possesses distinct advantages in that it is elastic and additions or changes may be made at any time. The present revision system amounts to legislation for ten-year periods and, while a certain degree of stability is essential, unforeseen events may warrant slight changes in the interim between revision periods. While the branding of a drug as "non-official" tacitly implies that it is of little importance, surely the consumers of these medicinal products are entitled to some measure of protection.

The numerous criticisms, comments and suggestions relative to the approaching revisions indicate a lively interest and tend to increase the value of the Pharma-

* Read before the Scientific Section, A. Ph. A., city of Washington meeting, 1920.

copoeia. Each of the professions having occasion to use the book has its particular line of criticism and any revision with an idea of keeping the present form must harmonize these varied interests by compromise. Among the suggestions which follow are several which have been advocated by workers in various fields but the legal aspect of the pharmacopoeial descriptions, definitions and statements has received very little attention if one may judge from the published criticisms.

Definite Botanical Origins.—The phrase, "and other species," at once offers a loophole for substitution or sophistication. It admits an uncertainty which should not exist in a book of standards. If the Pharmacopoeia, the standard, is in doubt as to the origin of a drug, this fact is apt to lead to wrong conclusions in the lay mind or may easily be twisted in such a manner as to create a reasonable doubt in the mind of a court. Accurate determination of botanical sources is often a matter of difficulty as it may involve the sending of a botanist to the far distant source of a drug. Financial outlay is necessary but surely a start could be made with a few of the more important drugs. Where several related species of a drug are found to possess similar therapeutic properties each individual should be named in the definition.

Tissue Terminology.—The various criticisms of the phraseology adopted by the Pharmacopoeia for the microscopical descriptions of plant tissues might be overcome by the adoption of a standard terminology. But such a standard can only be established by agreement, national or international. It would be well within the scope of the Scientific Section of this Association to initiate a movement toward this end. Much of the difficulty will be overcome if the instruction in microscopy as given in the schools is broadened and the tendency of an instructor to use the terms most familiar to him, totally disregarding those in use elsewhere, is abandoned.

Descriptions of Foreign Materials.—In instances where stems, flowers or other unofficial parts of a plant are apt to be present, it is desirable that descriptions of these non-official parts be briefly stated. This procedure would be of as material assistance as is the practice of stating tests for impurities in drugs of chemical nature. It would also establish a standard for the structure of these non-official parts in cases involving legal action.

Indication of Diagnostic Characters.—The indication of diagnostic characters in microscopical descriptions has been suggested. This procedure would be of undoubted value to the pharmacognosist and the student. It would also prove of value in legal work.

Indication of Possible Adulterants.—This suggestion presents but one advantage—that of suggesting to the student what adulterants are likely to be employed. On the other hand it might be open to objection in that it gives information to those who are inclined to practice sophistication. It gives this type of dealer a clue as to what to avoid in his manipulations. Laying undue emphasis or giving official recognition to any one adulterant is apt to create doubt in the legal mind as to the gravity of the offense if adulterants not so specified are employed. In practice we find that the number of substances which might be used to adulterate drugs is extremely large and the specification of any particular item would probably be of little assistance to the analyst.

Standard Fineness for Powders Used in Descriptions.—Great structural differences are apparent in powders of differing degrees of fineness. The official descriptions of the various histological elements apply to single elements or masses in which cellular structure is clearly apparent. In a coarse powder the various tissues are so consolidated that clear views or comparisons are impossible. In exceedingly fine powders the elements are apt to be too disintegrated for the observation of important characters. In the establishment of an official standard of fineness for powders to be used in framing the official descriptions we must avoid both extremes. In laboratory practice a No. 80 powder has been found to give best results with the greater number of drugs.

Mouldy Drugs.—Records of drug inspections by various authorities show that not a few drugs are rejected because of mould growths appearing upon them. Microscopical examination, either with or without special staining methods, furnishes a rapid means of determining this objectionable material. A brief description of the technic of mould examinations would give official recognition to this method of detecting spoilage in drugs.

Moisture in Crude Drugs.—The Ninth Revision adopts moisture limits for chemicals but fails to establish a standard for moisture in crude drugs. In accurate ash determinations the moisture content is of considerable importance. This is especially true of those drugs which as received in commerce contain large amounts of earthy material and which are thus apt to exceed the official ash limit. In borderline cases the ashing of a thoroughly dried drug will naturally give lower results than if the article contains five to ten percent of moisture. From the standpoint of the consumer the amount of moisture present in a crude drug is of direct importance especially in instances where the drug is of high price. Varying amounts of moisture in the drugs used may cause great variation in the therapeutic properties of preparations especially those not amenable to assay.

Considering the divergent as well as the convergent interests of the professions which use the Pharmacopoeia as a guide, the work of revision is necessarily difficult. The attempts to satisfactorily include all material of interest to each individual or profession in one volume can hardly hope to ever be entirely successful. At the time of the earlier editions the number of medicines in general use was but a small fraction of those in vogue to-day; the pharmacist of necessity prepared all his medicines; tests of purity and identity were not included and last, but by no means least, the Pharmacopoeia was not a legal code. It is hardly possible to meet all these changed conditions and still adhere to the original form of the Pharmacopoeia. The time is rapidly approaching when these new demands must be met. How this will be accomplished will no doubt be a subject of no little importance in the deliberations of the Committee for the Tenth Decennial Revision.

SCHOOL OF PHARMACY,
COLUMBIA UNIVERSITY.

THE MONOGRAPHS OF THE INORGANIC CHEMICALS OF THE UNITED STATES PHARMACOPOEIA—HOW MAY THEY BE IMPROVED?*

BY CHARLES H. LAWALL.

The monographs of chemical substances in the U. S. P. IX constitute nearly one-half of the total number of monographs in the book and of these one hundred and sixty-eight were either in whole or part referred to Sub-Committee No. 5 on Inorganic Chemicals, of which I had the honor to be the chairman during the active part of the revision period.

To properly consider this subject it is necessary to view first a longitudinal section of the entire centennial period, taking a certain single substance, for example, and then view a transverse section of that same substance as afforded by a number of representative foreign pharmacopoeias.

Sodium Bicarbonate has been selected for this rather unusual study, and a survey of the collected facts will be found of great interest in drawing conclusions as to what improvements, if any, can be made.

1820—Sodium Bicarbonate was called simply carbonate of soda, Na_2CO_3, being then called subcarbonate. A process was given for preparing it by crystallization from a solution of sodium subcarbonate and ammonium carbonate, which was directed to be heated gently until the NH_3 had been driven off. No tests were given for identity or purity. Total number of words in the monograph, 80.

1830—Still called carbonate of soda, with the synonym *Sodae Bi-carbonas* given. It is directed to be made from the subcarbonate (Na_2CO_3) by dissolving it in water, passing into it CO_2 to saturation and then allowing the solution to crystallize. No tests for identity or purity are given, but the statement is made "less soluble than the carbonate." Total number of words in the monograph, 89.

1830—2nd Edition. It is here for the first time called only Bicarbonate of Soda, and is made as in the preceding process. Total number of words in the monograph, 101.

1840—Official as *Sodae Bicarbonas*. Directions are given for preparing it by taking broken crystals of sodium carbonate and placing them in a suitable vessel in which they may be exposed to the action of a stream of carbon dioxide until fully saturated. The following description and tests are given:

"The salt is white and opaque and wholly soluble in water. By a strong heat it is converted into anhydrous carbonate of soda. Its solution, unless heated, does not yield a precipitate with sulphate of magnesia."

Total number of words in the monograph, 192.

1850—Official again as *Sodae Bicarbonas*. Same method of preparation as in 1840. The tests have been slightly elaborated as the following will show:

"The salt is white and opaque and wholly soluble in water. By a strong heat it is converted into anhydrous carbonate of soda. Its solution slightly affects the color of turmeric and is decomposed by effervescence with acids. It does not yield a precipitate with chloride of platinum, nor, unless heated, with sulphate of magnesia. The precipitate produced by chloride of barium is wholly soluble in nitric acid."

Total number of words in the monograph, 204.

1860—Exactly the same as in 1850 as to title, and essentially the same as to method of preparation and tests. Total number of words in the monograph, 223.

1870—*Sodii Bicarbonas Venalis* (Commercial Bicarbonate of Sodium official in primary list). This was evidently a mixture of carbonate and bicarbonate, for among its properties the following statement is made: "When dissolved in successive portions of water, the first

* Read before the Scientific Section of the A. Ph. A., City of Washington meeting, 1920.

portions of the solution produce with solutions of corrosive sublimate a reddish brown precipitate; the latter portions have no effect."

From the latter was made:

Sodii Bicarbonatis: by washing it in a percolator with distilled water until the washings cease to precipitate a solution of sulphate of magnesium. It is then directed to be dried on bibulous paper in a warm place.

The description and tests are as follows:

"A white, opaque powder, wholly soluble in water. It does not precipitate a cold solution of sulphate of magnesium, nor is a solution of the salt in forty parts of water precipitated by corrosive sublimate. The precipitate produced by chloride of barium is wholly soluble in nitric acid."

Total number of words in the two monographs, 204.

1880—*Sodii Bicarbonas and Sodii Bicarbonas Venalis* are both recognized but no process is given to produce the former by purification of the latter. The chemical formula and molecular weight were given alike under both titles and under the latter it was stated that it is "corresponding in physical properties and reactions of identity to *Sodii Bicarbonas,*" to which are added tests for limit of chloride (no immediate precipitate with test solution of nitrate of silver in a one percent solution of the salt) or of sulphate (a similar test with chloride of barium T. S.). A test for limit of carbonate was given by directing that a saturated cold solution should not yield more than a slight precipitate with a concentrated solution of sulphate of magnesium. A titrimetric test for purity with oxalic acid V. S. was given and a minimum of 95 percent purity was required.

Under *Sodii Bicarbonas* were given the following classified data:

Physical description.
Solubilities.
Effect of heating.
Identity tests.

Tests for impurities (the same limits of chlorides and sulphates were given as under the commercial salt).

Tests for absence of ammonia and carbonates were also given.

Assay—By titration with oxalic acid V. S. and a requirement of 99 percent purity; no indicator mentioned.

In conclusion a list of preparations into which the salt entered as an active ingredient was given. Total number of words in the monograph, 279.

1890—*Sodii Bicarbonas* only (the *Venalis* having been dropped).

The arrangement of the text is as follows:

Latin title.
English name.
Chemical formula and molecular weight.
Method of preservation.
Physical description and properties.
Solubilities.
Identity tests.
Tests for impurities including the following:
- Mechanical impurities.
- Sulphocyanates.
- Potassium.
- Carbonate.
- Arsenic and heavy metals.
- Calcium.
- Chloride.
- Sulphate, sulphite, hyposulphite.
- Ammonia.

Assay—By titration with normal sulphuric acid, 98.6 percent purity being required. Methyl orange directed as indicator.

A list of preparations is given in which it is the active ingredient. Total number of words in the monograph, 534.

1900—(8th Revision) *Sodii Bicarbonas.*

The arrangement of the monograph is as follows:

- Latin title.
- English name.
- Chemical formula and molecular weight.
- Rubric (Statement of purity requirement of 99 percent) and method of preservation.
- Physical description and properties.
- Solubilities.
- Effect of heat.
- Identity tests.
- Tests for impurities including:
  - Ammonia.
  - Mechanical impurities.
  - Carbonate.
  - Sulphocyanate.
  - Heavy metals.
- Assay—By titration with normal sulphuric acid using methyl orange as indicator.
- Average dose.

Total number of words in the monograph, 350.

U. S. P. IX—*Sodii Bicarbonas.*

The arrangement of the monograph is as follows:

- Latin title.
- English name.
- Abbreviation.
- Rubric (requiring 99 percent purity after drying).
- Directions for preservation.
- Physical description and properties.
- Solubilities.
- Effect of heat.
- Identity tests.
- Tests for impurities, including the following:
  - Ammonia.
  - Mechanical impurities.
  - Carbonate.
  - Heavy metals.
- Assay—By titration with normal sulphuric acid, using methyl orange as indicator.
- Statement of neutralizing value in terms of normal sulphuric acid and *vice versa.*
- List of official preparations in which it is an active ingredient.
- Average dose.

Total number of words in the monograph, 318.

A careful study of the foregoing will convince the observer that instead of having become longer and more complex, this text, which is typical of its class, has been simplified and shortened. The highest peak of verbosity and detail was reached in the 1890 Edition, which contained 534 words as compared with 318 words for the same monograph in the U. S. P. IX.

One marked change also will be seen in the phraseology that where it was formerly the practice to use the subjunctive mood and state that "if" such a procedure were followed a certain result would ensue, the declarative style is now used in its simplest form. Another change that will be noted is that while in some of the former editions the *key words* of the tests for impurities were accompanied by qualifying terms such as *absence of* and *limit of*, in the present edition they are unqualified.

A survey of the texts of the same chemical in a number of the important

foreign pharmacopoeias will be interesting for comparison. In the interests of space these data are tabulated as follows:

SODIUM BICARBONATE IN FOREIGN PHARMACOPOEIAS.

Name of pharmacopoeia	Belgian	Norwegian	Danish	Italian	Swedish	Nederland
	———	———	———	Latin	———	———
Title of substance	*Natrium Bicarbonicum*	*Bicarbonas Natricus*	*Bicarbonas Natricus*	*Bicarbonato di Sodio*	*Bicarbonas Natrico*	*Bicarbonas Natricus*
Abbreviation	None	None	None	None	None	None
Rubric	None	None (symbol and mol. wt.)	None (symbol)	None	None	None (symbol)
Directions for preservation	None	None	None	None	None	None
Physical description and properties	Yes	Yes	Yes	Yes	Yes	Yes
Solubilities	Yes	Yes	Yes	Yes	Yes	Yes
Identity tests	Yes	Yes	Yes	Yes	Yes	Yes
Tests for impurities	Ammonia Heavy metals Chloride Sulphate Sulphocyanate Carbonate	Iron Heavy metals Chloride Sulphate Sulphocyanate Thiosulphate	Ammonia Heavy metals Chloride Sulphate Sulphocyanate Carbonate	Ammonia Arsenic Chloride Thiosulphate Carbonate	Heavy metals Chloride Sulphate	Ammonia Heavy metals Arsenic Chloride Sulphate Sulphocyanate Carbonate
Key word	None	Yes (unqualified)	None	Yes (unqualified)	None	None
Assay	By ignition after desiccation 63.8 per cent residue	None	Same as Belgian	Same as Belgian	Titration with HCl *N*/1	None
List of preparations	None	None	None	Yes	None	None
Dose	None	None	None	None	None	None
Number of words in monograph	179	164	137	185	131	186

SODIUM BICARBONATE IN FOREIGN PHARMACOPOEIAS.

Japanese (English)	Austrian (Latin)	British (English)	French Codex	German	Spanish	Swiss (German)
			———	French	———	
Natrium Bicarbonicum	*Natrium Hydrocarbonicum*	*Soddi Bicarbonas*	*Natrium Bicarbonicum*	*Natrium Bicarbonicum*	*Bicarbonico Sodico*	*Natrium Bicarbonicum*
None	None	None	None	None	None	None
None (symbol and mol. wt.)	None	Yes 98.5 per cent	Yes (Chem. Form. and mol. wt.)	Yes (Chem. Form. and mol. wt.)	None (Chem. Form. and mol. wt.)	None
None	None	Yes	Yes	None	None	None
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	No	Yes	Yes
Yes	Yes	Yes	Yes	No	Yes	Yes
Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia
Chloride	Heavy metals	Heavy metals	Heavy metals	Heavy metals	Heavy metals	Heavy metals
Sulphate	Chloride	Chloride	Chloride	Chloride	Chloride	Chloride
Sulphocyanate	Sulphate	Sulphate	Sulphate	Sulphate	Sulphate	Sulphate
Carbonate	Sulphocyanate	Sulphite Thiosulphate Lead (special) Arsenic Carbonate Thiocyanate	Carbonate Insoluble matter Organic matter	Sulphocyanate Carbonate Potassium	Carbonate Potassium	Sulphocyanate
None	None	Yes	Yes (unqualified)	Yes (unqualified)	None	None
Same as Belgian	Same as Belgian. Also by titration with normal acid	By titration with normal sulphuric acid	Same as Belgian	Same as Belgian	Same as Belgian	Same as Belgian followed by titration with normal sulphuric acid

None	None	None	None	None	None	None
None	None	Yes	None	None	Yes (therapeutic action)	None
		Saturation equivalents of organic acids given	Medical uses and incompatibilities given			
130	171	224	452	219	119	100

It will be seen from a comparison of the data submitted that in comprehensiveness and detail the U. S. P. IX stands at the head of all of the pharmacopoeias of the world. This is, of course, accompanied by an increased use of space, only one national pharmacopoeia, the French Codex, exceeding us in this respect; but the French Codex while being more verbose is not nearly so comprehensive nor exact.

In no other pharmacopoeia is such careful attention paid to the minute details of phraseology which go to make up exactness in directions, and yet our work is by no means free from flaws or criticisms in this connection.

The present U. S. P. Sub-committee on Inorganic Chemicals, under the leadership of Chairman H. V. Arny, is attempting to solve one vexing problem in advance of the next revision. This is in connection with the tests for chlorides and sulphates which are difficult to describe in such a manner as to leave no room for misunderstanding. Other pharmacopoeias have failed in this respect, for such phrases as "not more than opalescent," "no turbidity within two minutes," "faintly opalescent," "weak opalescence," "should remain clear for five minutes," "not more than the slightest reactions for," "no precipitate," are found in connection with these tests in the foreign monographs just reviewed. Without accurate definitions of opalescence, etc., there is always room for argument, and argument upon such minor points as this (even when an article conforms to the purity established in the rubric) seems to be the favorite indoor sport of many of our American chemists and purchasing agents.

If the United States Pharmacopoeia is to remain a book of widely and frequently used standards as well as a guide for physicians and pharmacists, and if no change is made in the policy of revision, it is difficult to see how the texts of this group of substances can be much abridged, although improvement is undoubtedly possible along lines of simplification and in uniformity and exactness of phraseology. In fact what is needed very much in the next revision is an editorial committee who shall share the burden of responsibility which has been placed entirely upon the chairman of the General Committee of Revision in times past.

Abridgment can come only through the increase of general tests. Whether these are possible for many substances in such a large group of diverse substances remains to be seen. By the introduction of general tests for chlorides, sulphates, etc., and even for identity tests, as is done in the British Pharmacopoeia, the size of the monographs on inorganic chemicals in the next edition of the United States Pharmacopoeia can be reduced by at least twenty-five percent, which will be a great gain in space and will carry with it certain marked advantages to the users of the book who are not seeking chemical details, but are consulting it from the standpoint solely of the prescriber or the dispenser.

PHARMACEUTICAL RESEARCH AS A PUBLIC SERVICE.*

BY H. V. ARNY, PH.D.

(*Chairman, Research Committee, American Pharmaceutical Association*)

The relation of research to the public is sometimes as difficult to define as it would be to predict what lad in school this year will be elected President of the United States in 1960. But even as the acorn gives promise of the mighty oak to those viewing that glans with the eye of faith, so may a piece of research of purely theoretical character hold within it infinite possibilities of practical achievement.

Who for instance among those who were delving thirty years since into the secret of the Hertzian waves could have imagined that a Marconi would arise to utilize them to send our thought pulsations over all the world. Again little did Nernst, the mildest of men, albeit now of malodorous memory as the instigator of the German poison gas attacks, think when he began in the cloistered quiet of his Göttingen laboratory, his study of the conductivity of rare metals that it would develop into that vast industry the manufacture of tungsten lamps. In the same way, any piece of pharmaceutical research, no matter how simple or fragmentary may lead the investigator or others into paths of infinite possibilities.

There are some who belittle pharmaceutical research; who think that pharmacy and especially American Pharmacy has accomplished little of merit; who seem to think that no investigation is worthy of the name "research" unless it proves the structure of a complex organic substance or presents a new plant which the investigator may have the pleasure of christening. For my part I have an entirely different idea of pharmaceutical research, I consider every paper reporting results of original work as a piece of research; I feel that an improved recipe, the result of real experimentation may be a more valuable piece of research than many a more ambitious effort; I deplore the fact that in these days of chasing after the nimble dollars so needed to pay for shelter, food, and raiment, the retail pharmacist seems less interested in making his contributions to pharmaceutical knowledge than did his predecessors of a quarter or a half century ago.

To turn to our scoffer of pharmaceutical research, permit me to point out to him some of the achievements along the line of pharmaceutical investigation. Let us take up some instances that are now classic. Let us think a moment of the pharmacist Scheele,[1] who in the laboratory of his apothecary shop isolated chlorine and oxygen and extracted from plants fruit acids and other principles. Let us ponder over the pharmacist Linné[2] who converted plant lore into the science of botany. Let us turn to the apothecary Sertürner[3] obtaining from opium morphium the first discovered alkaloid. Let us give credit to the pharmacists Pelletiere and Caventou[4] for their extraction of quinine, that tremendously valuable and widely used alkaloid. Let us sing the praises of the modern pharmaceutical teacher, Bourquelot[5] and his pupils for their striking work on glucosides, enzymes, and glucosidal synthesis. Let us acknowledge the greatness of Tschirch,[6] not only in pharmacognosy but also in phytochemistry.

"But," says the scoffer, "what has this to do with American pharmaceutical research?"

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* Read at the meeting of the Pennsylvania Pharmaceutical Association, June 23, 1920.

This is in truth the *raison d'etre* of this paper and were I to give you a truly comprehensive picture of what American pharmacy has contributed to human knowledge of human welfare I would tire you out before I was half through the illustrious list. So a few outstanding examples must suffice.

Let us take pepsin for example. This enzyme was first studied by the French pharmacists Boudault[7] and Payen[8] and after this the work was taken up by the American pharmacists Scheffer,[9] Fairchild,[10] and Webber[11] their work bringing relief to thousands of sufferers, and wealth to many.

Let us think of the pharmacists Duhamel and William Proctor, Jr.,[12] the pharmacist E. R. Squibb,[13] the pharmacist Joseph P. Remington[14] and the pharmacist C. Lewis Diehl[15] bringing to fruition the work on percolation begun by the French pharmacists Boullay[16] and Robiquet,[17] so perfecting this method of drug extraction, that in Europe it is called the "American method of percolation" and by its use bringing into being that valuable, distinctly American and enormously used class of galenicals, fluid extracts. Then let us turn to compressed tablets. While these were originally devised by the Englishman Brokedon[18] as a method of compressing black lead and while a few compressed tablets of medicaments drifted into this country from England in the fifties it was the American pharmacist Jacob Dunton who first manufactured tablets in a practically commercial way, thus starting the enormous tablet industry which the pharmacist justly views with some alarm as the machine-made cause of the decline of the old-fashioned art of dispensing pharmacy. The pharmaceutical development of the tablet industry is almost entirely American, and upon the roll of workers we find first the pharmacist Dunton, the pharmacists Wyeth, Fraser, Mulford and many others cited in Kebler's[19] remarkable compilation of the literature of tablets. Let it be borne in mind, that the general use of tablets upon the continent of Europe, a matter occurring during the last twenty years, is largely due to the efforts of the pharmacists Burroughs and Wellcome, Americans, even though their manufacturing plants are established in England.

Then let us consider emulsions. It is true that the first pharmaceutical emulsions were apparently prepared by the English[20] and French[21] pharmacists but we seldom stop to realize the work done in this line by the Americans, Procter and Maisch[22], Diehl[23] and Painter.[24] Nor has the scientific side of emulsion making been neglected by the American pharmacists. There is no more interesting and important chapter of physical chemistry than the subject of emulsions and the best work in this line, as far as oil in water emulsions are concerned, is that done recently by the pharmacist Roon[25] and the pharmacist Crockett[26] under the guidance of their teacher Oesper.

"Ah!" but the critic may say, "what you cite is largely commercial." I am one who from sad experience knows that the establishing of the feasibility of a certain line of investigation is one thing and the putting of the idea into practical, workable, fool-proof shape is another. I also realize from actual experience that the latter work is oft-times more difficult than the former; that the conversion of a good idea into an accomplished commercial fact requires brains, patience, time and money. Hence I deny the allegation that research ceases to be research when it becomes commercially successful.

But if one insists upon pure research, the American pharmacist is ready with the proof of his ability in this direction. Let us first turn to the most altruistic work done in American pharmacy, the revising of the Pharmacopoeia. Here we have research performed as a labor of love by the members of the Revision Committee, "here a little, there a little" frequently done anonymously, always done with no thought in mind save the bettering of our national standard. Upon the roll of honor of pharmacopoeial research workers, we find first of all, William Procter, Jr.,[27] who in 1841 was Chairman of a Special Committee of the Philadelphia College of Pharmacy working upon the invitation of the, then entirely medical, Committee on Revision to assist the latter in its work on the pharmaceutical side, of the 1840 Pharmacopoeia. Then comes Chairman Charles Rice,[28] Sanskrit scholar, hospital apothecary and pharmaceutical historian; then let us pause to think of our unforgettable Joseph P. Remington[29] upon whose grave should be planted as symbols *Brunella vulgaris* (all heal) for his work, *Passiflora incarnata* for his sacrifices for pharmacy, and *Gnaphalium polycephalum* for "the promise of things hoped for"; then let us give credit to the present galaxy, LaWall,[30] Cook,[31] Beringer,[32] Raubenheimer[33] and Scoville.[34] Before closing the subject of pharmacopoeial research, permit me to suggest that the old idea that this type of work should be impersonal if not confidential, should be replaced with the newer thought that referees should be encouraged to publish their findings, not so much for their own credit as to give the publicity to the vast labor incurred in preparing our national standard and as explanatory of why certain pharmacopoeial changes are made.

Turning to the so-called "pure sciences" American pharmacy has the right to be proud of the contribution of its workers along these lines. In the field of plant research there was Maisch,[35] beloved teacher and American winner of the Hanbury medal; there is Rusby[36] the botanical explorer, introducer of South American drugs and the world authority on Bolivian flora, there is Kraemer[37] whose work on starches and on systematic classification of powdered drugs has brought him international fame; to say nothing of a score of the younger pharmacognosists whose work adorns the pages of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Then think of the achievement of American pharmacists in research along the line of phytochemistry, beginning with the work of early eclectic practitioners,[38,39] medical and pharmaceutical; the investigations of Maisch,[35] and Trimble[40] and their students at the Philadelphia Collegeof Pharmacy; the brilliant work of Schlotterbeck[41] on papaveraceous plants; the recent investigations of Viehoever, Ewing and Clevenger[42] at the Bureau of Chemistry; the study of anthraquinone drugs by Beal;[43] leaving as the last word the achievements of our own Dr. F. B. Power[44] and his co-workers, our British cousins, at the Wellcome Research Laboratory.

If we turn to volatile oils, we find among the valuable contributions to our knowledge of this difficult line, the early American work of F. B. Power, the researches of Edward Kremers[45] and his pupils, culminating in the intensely practical application of Kremers' great knowledge in this subject in the reports on the commercial possibilities of oil production, that have emanated from the Wisconsin Pharmaceutical Experiment Station. And lastly in my enumeration

of the achievements of pharmaceutical research, in the field of colloidal chemistry, American Pharmacy not only has a master, but a pioneer, in the person of John Uri Lloyd,[46] an acknowledgment of this being recently made by Ostwald in his journal, *Kolloidchemische Beihefte* in which he gives credit to Professor Lloyd as one of the pioneers in colloidal chemistry and pays him the great compliment of publishing in full translations of the papers that Lloyd read before the American Pharmaceutical Association at its meetings in 1879, 1881, 1882, 1883, 1884 and 1885.

Do not the forty-six names cited above prove the case for American pharmacy? To enumerate more would be boresome and yet in closing the list I am aware that I am omitting the names of many of my friends, some of them present at this time, whose investigations merit recognition in the compilation of American pharmaceutical research. The scientific investigations on the part of American pharmacists is not merely a thing of the glorious past, but is in effect in this the living present (as attested to by the splendid collection of papers presented at this meeting) and will continue in the greater future that lies before us. Of this I am certain as I note the contributions of younger men in American Pharmacy which appear in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, *The American Journal of Pharmacy*, the journals of the *American Chemical Society;* contributions which I have the pleasure of assembling in abstracted and permanent form in the YEAR BOOK OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

THE PROMISE OF THE FUTURE.

But what of the future of American Pharmaceutical Research? At times, like most of us who have passed across the half-century line, I feel discouraged and think that these times are not as rich as old times. But in more optimistic moments, I see that truth ever presses onward and to-day is not only better than yesterday but that to-morrow will be best of all. In the first place each year we live upon this globe each of us finds it more difficult to live as one apart. Combined work, a system of mutual helpfulness, is replacing the individualistic system of the days gone by and for us the most hopeful sign of the future is the fact that American Pharmacy now realizes that if it is to measure up in the future to achievements of the past, it must do this by means of coöperative work.

This is the spirit that now animates the Research Committee of the American Pharmaceutical Association. Organized in 1918 with one specific duty of recommending the annual award of grants from the A. Ph. A. Research Fund, we have now begun work toward bringing into one central national committee, the research workers of all of our national drug associations and I hope to see the idea so developed that the proposed national committee will eventually include representatives of the "papers and queries" committees of our several State associations.

That there is still an abundance of material in the field of pharmaceutical research is proven by the energetic efforts in this direction made by scientists without pharmaceutical training. The great Rockefeller Institute, the chemists of the great dyestuff plants, university professors of organic chemistry and teachers of pharmacology in medical schools are attaching pharmaceutical problems that we are neglecting and oft-times I am fearful lest pharmacy will sit idly by and let our more energetic confreres capture our pharmacal field.

Recently talking with a scientific friend he asked, "What is there to do in the field of pharmaceutical research?" My answer was substantially what I have given above as to what American Pharmacy has done in the past; what non-pharmaceutical scientists are now doing along the lines of pharmaceutical chemistry; and then I added a list of problems along the lines of pharmaceutical chemistry that are as yet unsolved. Among these I cited:

(*a*) The condition of the "available chlorine" in the pharmaceutical chlorinated solutions, thus taking up the work where Odling left off.

(*b*) The application of phytochemistry to the large number of southern plants that have been used in rural districts as medicines. Remarkable though the work of Power and his associates as well as that of other investigators have been, there are still a number that should be studied, among them *Parthenium hysterophorus*, *Cephalanthus occidentalis*, *Saururus cernuus* and *Sarracenia flava*.

(*c*) An investigation of the possibilities of establishing a systematic scheme of separation of plant principles in galenical preparations. Beal has shown the possibilities of such a plan of separations as far as anthraquinone drugs are concerned and my own commercial work shows that this plan could be extended to limits almost rivalling in usefulness, the well known tables of separation of the metals in inorganic analytic chemistry.

(*d*) Similar work in preparing a table of systematic separation of synthetic drugs continuing the excellent work already begun by Miller.[47]

(*e*) Improved methods of alkaloidal assay and particularly careful investigations of the factors aiding or hindering alkaloidal extraction. There is much for us to learn about alkaloidal assays, as recent work of Beal has shown.

(*f*) Study of the possibilities of the accurate assay of minute quantities of alkaloids in galenicals such as the morphine content of paregoric. In this line, the possibilities of colorimetric assay have been scarcely touched.

(*g*) A thorough study of colorimetric assays as relates to pharmaceuticals with special reference to more exactitude in laying down the minutiae of a colorimetric test. My work up to the present time shows that the usual methods of colorimetric assay now in vogue are as inaccurate as it would be to run acidimetric assays with nKOH V. S. made by dissolving 56 grammes of commercial potassium hydroxide in water enough to make 1 liter.

(*h*) Study of synthetic chemicals used in medicine and preparation of still better types of such medicinal chemicals.

The topics I have just suggested are but seven of one hundred lines which could keep one hundred investigators busy for years along the lines of pharmaceutical chemistry and then let us recall that pharmaceutical chemistry is but a small part of research. Let us realize the unsolved problems of galenical pharmacy and let us think of the vast possibilities offered in the field of pharmaceutical botany and pharmacognosy. If one doubts the latter statement let him study the list of subjects needing research submitted at the last meeting of the American Conference of Pharmaceutical Faculties by Chairman Albert Schneider of the Conference Committee on Research. This list includes twenty-seven topics embracing such diversified subjects as the micro-analysis of drugs, seed germination tests of

drug plants, composition of dusting powders and face powders, microbic contaminants of pharmaceuticals, drug plant cultivation and even such intensely practical subjects as drug store sanitation and diseases of soda fountain syrups.

The enumeration of pharmaceutical achievement given above should be the earnest of what we will do in the future and while we rejoice in the interest shown in pharmaceutical problems by our friends in other lines, we must bestir ourselves and do our share of the work which is rightly our heritage. We teachers should inspire our pupils with the spirit of research; we workers of the every day world should publish our findings, however small they may seem, even as our predecessors did, we organization men should see that our associations encourage research. Then and only then will pharmacy maintain its right to be called not merely a trade, not merely an art, but also a profession in the truest sense of the term.

In conclusion let me take the liberty of appending to this paper a partial bibliography containing references to the papers published by the investigators cited above as those of which American Pharmacy is proud. Only those papers which I consider as among the best efforts of the authors are given in the bibliography as the preparation of a complete list would have consumed much time and would be tiresome to my hearers.

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THE NATIONAL RESEARCH COUNCIL.*

BY C. E. MCCLUNG, PH. D.[1]

The National Research Council is a novel institution, something new in our national life; a thing full of the very greatest promise for scientific research and I sincerely hope that there may be coming out of the discussion here some means by which the American Pharmaceutical Association may be brought into a position to engage in research work in connection with our organization.

I will sketch briefly over the history of the Council. Doubtless many of you are more or less familiar with it, but every day those connected directly with its operation find that something new comes up. I think it would be wise therefore if I did not assume, on your part, too much knowledge concerning this organization. It is one of the "war babies" and came into existence through the necessity of our Country meeting the highly organized scientific research work of our recent enemy. The Council is not so recent, however, in one sense. During the Civil War the Government of this country felt the need of advice from scientific people and President Lincoln called into existence the National Academy of Science. The Academy was to advise the Government in problems of science and art, and has served very effectively during and since the Civil War. I recall, for instance, the Forest Service which was established through the advice of this scientific body.

When it seemed that we were being drawn into the world war, President Wilson called upon the National Academy to prepare itself for service again, and on this occasion the men in charge felt that it would be most advisable to enlarge in their connections. The Academy is not a large body and has grown to be a sort of honorary society, and was therefore not of sufficient size to accomplish the purpose which the President wished to carry out. Accordingly the Academy advised that there be created an auxiliary body to be called the National Research Council. The President accepted this advice and asked the Academy to organize such a body. This was done by the most direct means possible. The Academy called scientific men of prominence from all parts of the country to Washington and put them to work or allowed them to remain where they were in

* An address delivered before city of Washington meeting of American Pharmaceutical Association, 1920.

[1] Chairman Division of Biology and Agriculture, National Research Council.

their laboratories, placing them wherever they could serve most effectively. This method was the best possible to bring our scientific forces rapidly together into the service of the country.

After this had been going on for a year or more the President saw the effectiveness of the organization and conceived the idea that it would be very well to continue it. Accordingly, by an executive order, he perpetuated the Council as a permanent organization, under the charter of the National Academy of Sciences. You see, therefore, that the Council at the present time is under the charter of the National Academy of Sciences, and operates also by virtue of the executive order of President Wilson. It has as its object to promote scientific research in every way possible, to stimulate scientific endeavor, and to advise the Government whenever called upon. It is to have in mind always the possibility of another war, so that our scientific forces may readily be mobilized. That is the nature of the organization, then. It is a perpetual body under those two conditions.

After the war was over, it seemed to those who had been in contact with the work of the Council, that the form of organization was not one which would be most effective in peace time. In fact it was most autocratically organized as a body, and since this country had gone into the war to save the world for Democracy, it seemed quite improper that this organization should be on any other basis. Accordingly, a reorganization of the Council was decided upon and then it became necessary to determine the best basis on which this should be carried out.

There were two possible plans of organization. It was thought that we might organize on the basis of the American Association for Advancement of Science and it was also thought that we might thus use the national scientific societies. The latter was decided upon, the reason being that these societies generally have a research requirement for membership and since this is a research council, it seemed to be the proper thing to utilize them. Accordingly the present Council is founded upon the national scientific societies as units of organization. I would like to make that quite clear, because, you see, there is necessarily imposed on the Council certain limitations by this form of organization. We have accepted the natural grouping of the scientific men as a basis on which to organize the National Research Council. Therefore any changes which are made must come by recommendation of these organizations.

I will next tell you just how these scientific men are brought into contact with each other. First, however, I will state that there are six general divisions representing the general relations of the Council, and seven divisions representing the different sciences and technical branches. I shall speak of the latter first, because, as I have told you, they exhibit the basis of our organization. We have seven of these: Division of Chemistry and Chemical Technology; Division of Physics, Astronomy and Mathematics; Division of Engineering; Division of Medicine; Division of Geology and Geography; Division of Psychology and Anthropology; Division of Biology and Agriculture.

You will now understand that these are not simple bodies. Most of them are combinations, for it was the purpose of the Council to bring together rather than to separate; to integrate rather than to distribute. Accordingly we have the group of Biology and Agriculture, which in many ways holds subjects not strictly comparable, but which is an outgrowth of the war organization. In general the present situation in the Council is the result of the practical experience of the war, and these subdivisions as we have them now, represent the groups which naturally came about as a result of the necessities of war.

To illustrate the nature of one of these divisions I will tell you about the Division of Biology and Agriculture, of which I happen to be the chairman and of which I know most. We have there represented ten different societies, all of which have a research requirement for membership, and these send men chosen to represent them in the Council, elected to the Division. There are twenty-four members and some of the societies—the large ones—have a greater representation

than the more specialized ones. For instance, the botanists, through the American Botanical Society, elect three, the bacteriologists one, and phytopathologists one. The reason for this discrepancy is that the Botanical Society includes practically all the membership of these special societies and it is only necessary to have a small representation of the special interests.

We get together, then, in a group of fourteen men, coming directly from these societies and in order that there may not be a lack of representation of interests, regions, or persons even, there is provided a membership-at-large of ten. These members are chosen directly by the representatives of the different societies, so the entire twenty-four are selected by the societies, either directly or indirectly through their representatives. You can see, therefore, that the membership is democratically chosen. This group of twenty-four assembled a year ago and selected a chairman, a vice-chairman, and an executive committee. The Division has not met since last year—it will come together May 8, 1920,* for the second time. The reason for these infrequent meetings is that it is very expensive to bring to Washington 24 men who are scattered all over the country and the Executive Committee of the Division can get together relatively inexpensively and more frequently. This Executive Committee, then, is really the functioning part of the organization. The policies are determined by the entire group and they are carried out by the Executive Committee.

The chairmen of Divisions have their residence in Washington and they receive a salary. Most of them are men from universities on leave of absence for the year. It is designed to have these officers changed frequently, in order that there may be no possibility of developing here in Washington a group which will tend to dominate the affairs of the Council, or operate independently without consulting the societies. The members are elected for three years and may not be re-elected until a year has elapsed. You see, therefore, that the Council is designed to move rapidly and to be very flexible, in order that we may not have a fixed body, and also in order that men may come here and get acquainted with the Council, and the methods of carrying on its work and then go back to their own institutions, and take the work of the Council and its methods with them. This then gives you an idea of the nature of one of the divisions.

The Council as a whole never gets together, because there are thirteen Divisions, each of about twenty-four members and if they were all brought together they would not be a very functioning body. There is, therefore, provided an Executive Board, which has as its members the chairmen of the different Divisions, and representatives of the Council. This Executive Board functions for the Council as a whole, as do the executive committees of the different Divisions.

Besides these seven divisions of science and technology, of which I have spoken, we have six general divisions. We have, thus, a Government Division and the members in the Government Division are chosen by the President of the United States. They represent the various scientific departments of the Government officially in the Council and we hope very much that the Government Division may grow into a most effective organization to connect the Government scientific agencies with the scientific people of the country. There are very great possibilities here, I think you will see.

Then we have a Foreign Relations Division, which relates the Council in this country to corresponding councils in the allied countries which have either been organized or which are just being organized.

We have the States Relations Division which is intended to relate the Council to similar organizations in the states. We hope that soon there may be in every state a council related to the national body in Washington, which will bear to the Council somewhat the same relation as the State Legislatures do to the National Congress.

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* Address delivered May 6.

Then we have a Research Information Service and it does a part of the work of the National Council which may be of very great service to us. It is the purpose of this Division to accumulate and have on file all kinds of scientific information which may be valuable in our research interests. Just now the Division is engaged in gathering together information about three particular things. We want to know where the laboratories are in the country where scientific research is being conducted, and it has already been discovered that there are about 7,000 of these. It is necessary to know the character of the people working in those laboratories and accordingly there has been sent out by the Research Information Service a questionnaire, asking for certain information about personal matters, items such as you find in "American Men of Science." Next, it is desired to find out just what are the scientific projects which are being carried on. It is hoped that we can get together complete information with regard to the researches being conducted in the country.

You can readily see how it would be quite possible with this information on file to prosecute our investigations much more effectively than is done at present. There are so many possibilities here that I cannot even stop to enumerate them. They will readily suggest themselves to you. Since we are a scientific organization we feel that it is necessary to have these facts before we decide upon any policy and it is hoped by Dr. Yerkes, the chairman of this Division, that we may gain sufficient support for this service so that there can be installed a mechanical sorting system, such as the Census Bureau has, for getting out information of any character from this assembled mass. It would then be quite possible for any of you within a few days to get full information regarding the people, the laboratories and the projects relating to one on which you might be engaged.

Then we have another division—the Educational Relations Division—the purpose of which is to relate the National Research Council to our educational institutions, and the forty or more addresses which I have given this year before various bodies have been largely on behalf of this Division. The General Education Board gave Dr. Kellogg a grant of $10,000, with which to make a survey of conditions in our educational institutions, and this is to be conducted from the standpoint of the investigator in an impartial, constructive spirit. We do not go about to find fault with the existing conditions or methods or anything of that sort. We simply go to ask what are the conditions and to help to determine what could be done to better these. Altogether, over a hundred institutions have been visited personally in this way and information has been gathered from them regarding actual conditions. When we have this information, for the first time, we will be able to say authoritatively that conditions are bad or good; are as good as possible or could be improved in this, that, or the other way. It will so represent conditions that the responsibility for them will rest with the educators and executives themselves rather than with the Council. I think you will see that there are great possibilities in any such arrangement as this.

Now, by this time you must want to know how an organization of this kind can continue in operation. During the war, of course, we received money from the Government and the only purpose involved there was to get definite results as quickly as possible. At present no money is received from the Government at all. The Council is not a Government organization, although as I have told you, it operates under the charter of the National Academy. It is not bound in any way by Government regulations. It is an entirely free organization. But to work there must be money, and we were fortunate in convincing, during the war, certain of the foundations, that the scientific people could properly expend money. Accordingly, the Carnegie Foundation made an endowment of $5,000,000.00 to the Council with which to keep it in operation. One million of this five million dollars, it is stipulated, shall go into the erection of a building. You can naturally imagine that a lot of scientific people, being suddenly confronted by the prospect of five million dollars, would rather hesitate about putting a million dollars into

a building. We would rather have done some other thing with the money, if we had been free in the matter. We could have done without the building for a while at least, but since we got the gift of the five million dollars, including the building, we very thankfully accepted the condition. Perhaps there is something to the position of the persons who gave us this five million dollars, that if we have some concrete evidence that we are really going to be in business, there may be

Mr. Root, who is so well known to all of us, has been very much interested in getting this fund for the Council. He stated recently that the scientists had organized almost everything effectively except themselves, and said that he hoped more money coming to us. At any rate that is the situation and we must accept it. they would succeed now in getting themselves properly organized.

You can see, therefore, that on this basis the Council is an experiment, financed by this corporation, to see to what extent the scientists of the country can bring themselves together, for the furtherance of scientific research. I think that if you describe the Council in any one word you might say that it is an *opportunity*. It is an organization, provided through which we may ourselves do things, and that is the essential point for us all to realize—especially, those who are not directly connected with the Council, and who think the men in Washington are doing things for them, and not they for themselves. It has to be coöperative. It will go only as far as the people who are interested in it make it go. That is one reason why I speak to you, that it may be possible for you, *as an organization of pharmacists*, to see a way in which you can be brought together with this Council. It may mean much to us if you are successful.

This five million dollars which we have received is only in the nature of an experiment, and if we demonstrate the capacity to organize and conduct successfully the plans which have been formulated we will be supported financially. We have not only these foundations as a source of support, but many industries will help us—we have indeed already received some considerable support from industries. The Council is not in the nature of a purely theoretical organization which has no concern for practical application. In fact it is the avowed purpose of the Council to put science to the service of the country. In that connection, you see, we do not avoid practical relations but rather seek them. We try to relate the requirements of the industries to the achievements of research work.

It is apparent to all that the industries have prospered greatly by the onward march of the sciences and have given little back. In fact, they have been parasitic upon science. They draw out from our laboratories with their large salaries the very best men they can get, and they are causing educational institutions to face a very serious problem. They are putting up larger salaries than schools are offering and the teaching forces are drawn away. It is going to be necessary to protect ourselves against the inroads of the industries. We must come to an understanding with them. They must see that they are depriving themselves of the future sources of supply and that it is to their interest to support the development of this investigation work.

The Rockefeller Foundation has been convinced of this fact through the efforts of the Council, and in other ways, and it has appropriated $500,000 to be expended within the next five years to support research fellows in physics and chemistry. These fellowships are to go largely to men with a Ph.D. degree. It is hoped that we can offer them sufficient support so that they will not wish to go out into the industries, but will become thoroughly interested in university work. At any rate there is this much to be said—there will be several more physicists and chemists in the universities after this than there would have been except for the establishment of this $500,000 fund. This year, I believe, there are about fourteen fellows, and the stipends they are receiving run between one and three thousand dollars. This again is an experiment to see what the Council can do. In addition to the five million dollar endowment we have received approximately a million dollars to be

expended, five hundred thousand dollars of it being in this grant from the Rockefeller foundation.

You might now think that there are considerable sums of money to be used for research but as a matter of fact the endowment will just be sufficient to keep the machinery running. There will, from this endowment, be no funds to put into researches. You may think that that is unfortunate, and in some way it is, but I believe in the long run it will be better that the Council should not have general funds given to it. It would be quite impossible to raise the money for projects already suggested to the Council—the necessary amounts run into the billions of dollars. The failure to support meritorious projects would only engender a great deal of trouble for the Council. Many persons would be disappointed if the projects which they presented were not financed and they would become displeased with the organization. Therefore, under the present arrangement, every project which comes before the Council has first to have itself backed up by the judgment of the particular group to which it is related; it must then be referred to the larger group in the Division and obtain its approval, and finally the approval of the Council, representing all the sciences, must be obtained before any action can be taken.

If an industry is involved we have to go to that industry and say: "Here is a project which will either directly or indirectly benefit you, and you should support it." Any money which is given, however, is received without restrictions and there is nothing done in the way of favoring an industry by the Council. I am mentioning that fact particularly so that you can see that there will be no influence of specific industries on the work of the Council. This is very important. I have now tried to give you an outline of the work of the Council and of its organization. I think that it is possible for me to suggest a few ways in which your organization could come into relation with the Council. I can only do this *unofficially*, of course, and I am going to do it because I am interested in pharmacy. You see from the nature of the Council that it will be necessary for you to come as an organization with some definite promise of research work, so that you may be considered in relation to the Council's organization and its work as a whole. It happens that pharmacy is related to botany, chemistry, physics, and many other subjects and especially to medicine, and it would, therefore, hardly be possible to relate pharmacy to any existing Division very directly. It might, however, be handled as was agriculture in relation to biology. In some way pharmacy was not involved in the early organization of the Council. I do not know why that was, because I was not connected with it in the earlier days. But you do have contact with the medical side of the Council and you might take up through Dr. Reid Hunt the question of obtaining representation on the Medical Division. We have in the Division of Biology, of course, the botanists, with whom you have much in common, and in the Chemical Division there is a large relation between chemists and pharmacists.

It seems to me that you might get your group together and study out an organization plan by which you could work into the Council, because, as I have explained here this evening, it offers an opportunity for the American pharmacists to do something for themselves and for science. It is not an organization that will do something for us but one through which we are able to do something ourselves. The work of the Council, as a matter of fact, has been largely self-examination and study so that it might be found in what way the organization could most profitably operate, and we spent hours in discussing and formulating decisions on questions of various degrees of complexity, and yet have not proceeded far. It is a very difficult matter, as I say, to organize the scientific forces of the country and to get them working together. If we could get all the people together in one place as an army would assemble and have them organized, it would be very easy perhaps, but as it is, it is very difficult to get a consensus of opinion in the first place and then to get it into operation.

In your case I think it would be desirable for you to establish connection with the Council by degrees. Soon you would have a representation of your own on the Council—that would come about naturally. The present organization is highly flexible and in no way fixed. It is responsive to the desires and wishes of our scientific organization combined or divided, just as is necessary or desirable. You need not in any wise fear that you are excluded from the organization of the Council or that you will have to "break into it in any way." It will only be necessary for you, as I see it, to have your plans well worked out and matured and to remember that the Council is a research organization and that it is designed for that one purpose—to encourage and extend the scientific research work in this country.

PHARMACEUTICAL RESEARCH.*

BY JOHN URI LLOYD.

We have listened with increasing interest to the outline of the Research Committee's systematic plans, so graphically presented by Dr. C. E. McClung. Would that we might all live to enjoy the consummation of the ideals expressed, forecasting as they do great achievements in a field that is practically limitless. When I found my name on the evening's program, as one appointed to discuss the subject "Research," I accepted that it meant, for my hearers, a rather prosaic evening devoted to details, but our friend's remarks have given me so inspiring an opportunity that I am led to venture into the realms of speculative thought whose outreaches are pleasurable to myself, and I hope will not be tiresome to my hearers.

Fifty years ago, when I was an apprentice in a drug store, a copy of a New York magazine came into my hands that came very near discouraging me from attempting the study of pharmacy. I found therein a statement, by a French chemist, to the effect (if memory serves me correctly) that if a book were printed with one million names on each page, one million pages in the book, and a million such books in one library, it would take a million libraries to hold the names of all the compounds that might, theoretically, be made from the known acids and the known alcohols. This statement was altogether hypothetical, and highly imaginative. There may have been an error of a few millions, but to a rustic boy, what would be the difference if there were a mistake in such a number? Calculating on such a basis is about the same as estimating star distances by sun distance units. When one considers a star that lies entangled in the milky way's infinity, what matters an error of a few million miles? When research is made of the millions of compounds cited by the French chemist, perhaps the astronomer's "milky way" has no speculative advantage. But I am only a humdrum pharmacist, as the world views such as ourselves; rights such as come to others, seem not in our sphere. Let us then, in propriety, come nearer home.

Very happily, Professor, have you told us that pharmacy is to be embraced in the program of your Research Committee. The question then is, have we, as pharmacists, aught to offer in the way of research opportunity? If so, what, and in what field does it lie?

In speaking of pharmacy, let me now use the word "art," since some may resist the application of the term "science" to pharmacy. And yet, I make bold to assert that this "art" of pharmacy embraces every "science" known, unless it be that of astronomy, and few will deny to us a share in the life that is the direct gift of the sunshine. This claim I presume to make, not altogether by reason of the modern conquests of pharmacy, but by historic right. Very remote must lie the field of human activity that held no pharmacist. Chemistry is an underlying

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*An address delivered before City of Washington meeting of the American Pharmaceutical Association.—Response to address of Dr. C. E. McClung.

part of pharmacy, botany is a part, biology is a part. In whatever direction one turns sight, lies something that contributes, or has contributed, to the art of pharmacy. From the ocean's depths to the mountain's top, came pharmaceutical research opportunity in the past. Whether in the frozen arctic or the torrid tropic, whoever enters a natural science field finds there the footsteps of the pharmacist. Turn to the east, west, north or south. Comes there not from each a something that gives the pharmacist an opportunity? Scarcely so deep into the earth can we go but that something is found to take the pharmacist's thought. From the beneficent ray of the sun that shines upon all alike, to the rarest element discovered by the diligent search of the chemist, all are utilized in humanity's remedial service.

Pharmacy is perhaps a cult, but if so, that cult has been honored by mention in the great research work now being instituted. May I not, then, as one of the "cult," through years of experience at least, claim as a pleasurable duty the privilege of calling attention to opportunities lying still untouched in outreaches before us, as I see them from my limited sphere of observation. "Limited," did I say? Is the word correctly used? Let us take the text of fact, as here we stand, and in speculative research thought together pass into the realms of the beyond.

If, in darkest night, we take a lighted candle into a forest dense as the Kentucky "woods" of my homeland as a boy, that flickering yellow ray gives but a narrow circle of light, very feeble, very limited in area. Here faces us the furrowed bark of a tree that, as a tree, is hidden in darkness. There, indistinct, stands a bush that passes mostly into shadow Here, as we turn our eyes, appears the bark of another tree, there rises a different bush. In the shadows beyond the bush appears a spindling sapling too indistinct to identify. It may be hickory, ash, maple or beech. Who knows? From the gloomy beyond intrudes a something—what is it?—our light is too feeble to penetrate the gloom. The extent of our vision is circumscribed, but small as is the circle of yellowness, it is enough to show that we stand in a woodland; that so far as can be determined by the flickering light of the candle, it is but a little wood and, large enough however to beckon us onward.

Bring next a coal-oil lamp. Brighter is this light, enlarged is the circle. Under its magic, springs a vision of fact where before was speculation. Where by the flickering candle light we saw only a part of an object, such as a bit of rough bark, we now perceive the trunk of a great tree, which yet brings to our vision no branch. High into the blackness above us, it ends in the shadows of night. The enlarged circle of light brings to our vision other trees that stand as sentinels, silent as death, beyond those shown by the feeble candle. Peering upward, we perceive drooping branches; leaves are hanging down from the twigs that interlace overhead. A squirrel's nest of leaves can be seen to rest in the fork of this small tree. An outlaw owl gazes down with wondering eyes, then snaps it bill in our very face as it silently flutters, like a ghost, into the impenetrable ring of darkness. In the outer shadows lie bark and brush, indistinctly outlined and fading into obscurity. The ring of darkness has been increased by the brighter light.

Bring now an electric torch. The circle of vision is again enlarged. Its brilliant light brings to view the very top of the great oak beneath which we stand. Far now may we peer into the distant recesses about us. Behold, we comprehend that we are in the midst of a mighty forest! But though the light has been intensified and the circle enlarged, the surrounding zone of darkness is but enhanced.

Avarice of scientific ambition beckons us. Let us not stand still—let us move onward, as explorers. Step by step we advance into the recesses of the great forest. We hesitate and turn about, and in backward glance catch glimpses of the reverse side of the bark-furrowed tree. The part we saw a moment back is now hidden from us. We stumble, cast our eyes downward; life structures are beneath our feet. We stoop, pick up a fragile flower. Behold, its beauties have

been crushed beneath the tread of our careless heel! We turn again, trampling leaves and herbage as we press onward, ever onward, passing into the darkness of the outer unknown, while the unseen beyond ever encircles us. Listen! what is that? The cry of a night creature comes to our ear. An insect buzzes, strikes our face, and disappears. Out of the gloom came the cry, into the gloom goes the insect. The *beyond* engulfs it all—the silent tree, the insect that rustled into our face, the night creature whose cry alone came to our ears.

Comes now the thought that neither candle, lamp, nor electric light has shown to us anything but that which lay on the *outside* of whatever came to sight. Of the great tree's trunk, the surface of the bark has alone been seen; the root of the tree is hidden in earth, the leaves that droop from above seem ever one-sided, the nether part like the reverse side of the moon, being always unseen. Nothing do we know of what lies beneath the bark of the beech, the hickory, the oak or the maple. We know not what possesses this or that tree's center, or embraces its roots. The light and processes are inadequate. All, all, except the very surface, is mystery.

Take now an axe, chop through the brown bark of this tree. White is the wood beneath. Another tree we next chop, red is the wood. From the wound of this tree oozes a fragrant juice, from that one comes a fetid smell. On close inspection we note that this leaf is red, that one green, the next is green above and yellow beneath. Some are covered with down, others with prickles. The unnoticed thorns of this branch bring the blood from our venturesome fingers. Anger stirs us to revenge—us, the uninvited invaders of this peaceful world! The call of science is upon us. Let us crush these things of life. Let us, in the name of our cult, tear apart their tissues.

Turn we now to the microscope. From out the littleness of a needle-point, behold, up starts a world of wonders. Now appears lacework of a delicacy unreachable by the art of man. Next we behold geometrical structures of mathematical exactness, now are perceived beautiful figures, interlocked, of what were seemingly but strands of thread. Behold the wonders of the micro-cells. Red is the juice that flows from this group, green from that, yellow from yet others. Wonders multiply—the half cannot be told, and yet, 'tis now but the glories that lie in a series of pin-points from the great forest's structure.

Yet we are not satisfied, research has but commenced. Comes now the retort and the test tube, reagent after reagent is applied to these beautiful creations, these things of life and order. Seeking acids, alkalies and other destructive agents made by man, we begin "research work" on the life tissues of these inoffensive bits of life-bred structures. A mighty maze we find now confronting us. Complexities thread complexities, inexplicably entangled is it all. This form is dominated by grease or oil, that by tannates or acids. Substances, such as pigments, everywhere abound. But the forest is not one plant, one bark, or one wood. Leaves and shrubs that have been seen to differ in form, size and color, are found to differ more widely yet in juice and content. This uncouth bit of bark is sweet, that beautiful flower is bitter. As search continues, the very presence of air and light brings changes to eye, nose and taste. Back to the woodland's natural wealth let us turn our thought. Scarce have we stepped from our track in this mighty forest. We stoop, scrape from the bark of a tree a bit of moss. Who knows the wonders locked in that delicate texture, that makes of a tuft of moss or a film of lichen, a thing in itself?

Let us press onward in our research work. East of the Mississippi River are more than ten thousand flowering plants, and an unknown multitude of lichens and mosses. Who knows the natures, sizes and shapes of the weird forms known as fungi—be they microscopic or otherwise? What of the micro-fungi or the pond-nourished algae, not even as yet classified by name? What are the limits of the insect life in our circle of light? Is not the biologist seeking the unknown in the night bird's structure? And yet, the scope of vision shown by the brilliant

electric light, is but a point in this forest waste, less than a point, if our mental conception of it all be not sufficiently trained to comprehend its littleness. Let us increase our vision. Follow now the sun.

Turning from the fields and forests of the east and middle west, let us cross the Father of Waters. From spreading fields we pass to the desert, with its wealth of strange herbage and yet stranger creatures. Let us explore the mountains to their very tops, creep through canyons where foot of man has scarcely trod. Let us trace the cactus, from the small specimen in its northernmost limit, to the gigantic forms dominating the land of Mexico, passing into tropic jungles farther south. Returning, trace we now the ocean's beach, from Alaska southward. Study not only the fields of herbage, but the living creatures, fish, reptile and crustacea that creep in the shadows or flash in the sunlight of the shoals of the tropic shores. Cross next the ocean, halting but a moment at Honolulu, to reach at last the scarce-explored continent of Australia and New Zealand. Turn back, sailing over waters alive with life that even flashes like fire in the night, to South America, where, once more in forests dense, flourish vines, herbage and trees even unnamed by the botanist, where for thousands of miles man has scarcely trod the earth, where roll rivers mighty, where are vast mountain fastnesses yet unexplored. Sail next to the great African continent, enter its deserts, note its tropic mountains, snow-capped. Creep into its swamps and jungles, reeking with miasmatic life, with insect pest, with beasts innumerable. Pass next through the long-worn land of Egypt, whose silent relics of man's activities lost in times gone by are yet new to modern research. Pass thence to India. Who knows its jungle wealth? The Himalayas rival the Andes in their incomparable height and silences. Persia, with its poet's thought, is yet untouched. The Arabian continent of charm and questionings, beckons yet him who meets its charm, as in the days of the famous Oriental story-tellers, whose imaginative spell never created a world to parallel that which is to be unfolded by science.

Enough, enough! Cover we must our eyes, press our hands over our aching temples, shut out the beyond, north, south, east, west. We have not even touched the land of the millions in "Celestial" China; the great outreaches of Russia are passed in silence.

Enough of wonders and mysteries that perplex and overwhelm. In it all we find opportunities for thought, even though it must be to illustrate man's insignificance and feebleness.

"But what," one may ask, "has such as this to do with pharmacy?" Better might one not ask, "Where in it all lies *not* a research opportunity for the pharmacist?" Have not tree and shrub, life structures and inorganics from near and far been his field from days remote to the present? Would the plans for research, as explained to us to-night, be complete, were the pharmacist's field to be neglected?

Listen! Who will venture to assert that one twig, one leaf, one creature of this mighty maze, be it vegetable or animal, big or little, has as yet been disenthralled from mystery by chemist, pharmacist, physicist or biologist? Is not even the germ cell that lies before our micro-eye, as incomprehensible as is the giant redwood of the land of golden thought? Does not this research plan, so lucidly explained to us, inspire a hope that this world of mystery and opportunity will increasingly give blessings to man, from its great wealth of hidden secrets?

But my time is exhausted, the clock strikes. Have we, in the wanderings of this half-hour's mental search, found a closed door? Is not the enlarged circle of light, cast by the lamp of modern science, bounded by an enlarged circle of darkness, does it not yet beckon us onward?

PROPOSED CHANGES IN THE MONOGRAPHS OF SOME VEGETABLE DRUGS FOR THE NEW UNITED STATES PHARMACOPOEIA.*

BY E. N. GATHERCOAL.

A number of influences have been causing for some years past an increasing tendency on the part of the U. S. P. Convention and the Revision Committee to restrict the scope of the Pharmacopoeia, and legalize the monographs contained therein. Certain questions, therefore, present themselves at the very outset of any discussion of the revision of the U. S. P.

Thus—Shall the U. S. P. become exclusively a book of legal standards for medicinal chemicals and vegetable and animal drugs, and the N. F., as its name indicates, be exclusively a book of formulas including all of the galenicals?

Again—Shall the U. S. P. endeavor to satisfy the legal requirements of law enforcement officials or be devised to serve the needs of the physician and pharmacist for simple standards for drugs and medicines?

On the answers to questions of this nature will depend very largely the character of the monographs for vegetable drugs in future revisions of our pharmacopoeia.

It seems self-evident that there is no need for two books of the same legal standing covering the same field. If the Pharmacopoeia is to fill its defined function as a book of authority containing the formulas and methods of preparation of medicines for the use of druggists, then there is no need for a second work of authority, such as the National Formulary, covering the same field. If, however, the definition of our pharmacopoeia is to be changed so as to indicate that it is a book embodying legal standards for drugs and medicinal chemicals, then there *is* need for a second book which shall supply authorized formulas for the medicines used by physicians and pharmacists. There is no question about the tendency for making the Pharmacopoeia more and more the book of standards for drugs and less and less a book of standard formulae. This tendency is evidenced by many recent writings upon this subject, and is very finely expressed in a recent paper by E. H. Gane, read before the New York Branch in March. This much should be said, however, ragarding such a pharmacopoeia; it should contain standards *for all* such articles of materia medica approved by the medical fraternity, this approval to be gaged by the extent to which the articles are used in medicine.

The suggestion that has recently been offered a number of times that the U. S. P. be published in two parts or volumes, one part to include the materia medica standards, the other part the galenical formulas, is also well worth careful consideration. This is a reversion to the old plan of the Pharmacopoeia, used from 1820 to 1870, though both parts were then published in one book.

Likewise the suggestion of Dr. Edward Kremers, that the U. S. P. be issued on cards and thus be in form for continual revision, each card being revised as need arose for such revision, would undoubtedly be practical and desirable, especially if the Pharmacopoeia becomes exclusively a work on materia medica standards, and the revision be placed in the hands of a small committee, possibly Government officials.

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* Read before Scientific Section, A. Ph. A., City of Washington meeting, 1920.

Physicians and retail pharmacists are rather remotely interested, however, in the purely legal standards for the primary drugs and chemicals from which their galenicals are prepared. They will assume that if a department of the National Government prepares these standards, or they are prepared by a small selected committee of experts, as has been suggested, these standards will be all that can be desired. They are, however, very much interested in the galenicals prepared from these drugs and will desire to closely supervise the revision of the standards for such medicines. This means, therefore, that such a U. S. P. would become of decreasing interest to the general medical and pharmaceutical professions, while the N. F. would have increasing popularity.

Keeping in mind the above statements, the following suggestions regarding the vegetable drug monographs are herewith presented:

First: As an exclusive book of standards the U. S. P. should include monographs for every vegetable drug used to a reasonable extend in medical practice in the United States, and especially of all drugs that are imported. The N. F. should be relieved of carrying any drug standards and the U. S. P. should carry standards for all the articles that the revisers of the N. F. might desire to use in any of their formulas. If the U. S. P. and N. F. are both continued as books of standards and formulae, then the standards of the vegetable drugs might well be divided between them as at present. It is of interest to note that in the U. S. P. of 1820 there were named some 225 vegetable drugs not including fixed and volatile oils nor active principles. In the U. S. P. IX and N. F. IV, there are listed 253 vegetable drugs not including the 100 or more fixed and volatile oils, alkaloids, glucosides and other active principles obtained from vegetable drugs.

Second: Drug names and plant names should be changed just as little as possible. Of course, botanical authority must be recognized and the nomenclature made to conform to this authority as far as possible. It is of interest to note that more than 40 of the 225 vegetable drugs named in the first U. S. P. have been carried through the century without any change in the official Latin title.

The criticism of Dr. Rusby, in his very excellent paper published in the JOURNAL OF THE A. PH. A. for March, concerning the change in the title of Cascara Sagrada, is a very just one. To substitute a Spanish common name for the Latin botanical name surely was a mistake. As in many other respects, the U. S. P. should be very conservative regarding changes in nomenclature.

Third: The legal status of the drug definition is resulting in complexity of phrasing that should be minimized as much as possible if the U. S. P. is to continue as a physicians' and druggists' guide. If it is to assume a more legal status, then such a complexity may well be carried as far as lawyers desire. It is suggested that the preservation rubric calling for the use of chloroform or carbon tetrachloride might be included, and perhaps amplified, in Part II, and referred to under all of the drugs to which it might well be applied.

Fourth: While the introduction into the U. S. P. IX of more extensive descriptions of the physical characters of the whole drug, and of the histological characters and the microscopical appearance of the powder, has been very highly and widely appreciated by pharmacognosists, yet it would seem that such descriptions should be limited to those points essential for the identification of the drug and the determination of its purity.

Fifth: The use of tests of precision, such as ash determination, the extractive determinations, the solubilities and chemical or micro-chemical tests for identity, quality, and purity should be encouraged. The mention, even though just by a word in parenthesis or italics, of the adulterant, or the indication of inferior quality sought for by a test, is helpful especially to pharmacists who may not be in close touch with these tests.

Sixth: In case the U. S. P. becomes eventually a book exclusively of materia medica standards, it would be desirable to include among the materia medica such extractions or solutions of drugs and chemicals as are prepared by manufacturing houses and can be definitely standardized as to all of their medicinal constituents by appropriate assays or tests; just as volatile oils, alkaloids and glucosides are now recognized as articles of materia medica rather than preparations.

Examples: Waters—Ammonia, Rose, Peppermint, Spearmint; Solution Hydrogen Dioxide, Spirit of Nitrous Ether, etc.

After this extensive introduction I must now make apologies for not reaching sooner the actual subject of the paper. But as a matter of fact, practically all of the suggestions that I had compiled during the last few years regarding changes in some of the monographs have already been presented in the very excellent papers recently published by Messrs. Rusby, Scoville, Gane, Kraemer, Francis, Farwell, Caldwell, and others.

Dr. Rusby's paper presents a number of criticisms and very valuable suggestions that should certainly have our endorsement, especially his points regarding the definition of Pix Liquida, Taraxacum, Rheum, Asafoetida, etc. Suggestions from numerous authors regarding the admittance of stem, not exceeding a certain thickness, in Belladonnae Folia, Hyoscyamus and Stramonium, should be complied with. The suggestion of Dr. Francis regarding Viburnum Prunifolium, that the definition should be changed back so as to include only the root bark, with a small allowance of stem bark, is approved. In fact, the present description of the drug indicates that only root bark is to be regarded as official, while the definition allows the use of stem bark. Professor Day recently criticised the definition of Resina and Oleum Terebinthinae as follows: As the oil is usually distilled commercially, from the freshly gathered and, therefore, liquid or semi-liquid oleoresin, the definition should not specify that the oil of turpentine and rosin be obtained from the *concrete* oleoresin.

UNIVERSITY OF ILLINOIS,
SCHOOL OF PHARMACY.

A NOTE ON THE EXAMINATION OF A COMMERCIAL SAMPLE OF OIL OF PENNYROYAL.*

BY GEORGE M. BERINGER.

On two occasions, recently, samples of what, it was reported, had been sold as Oil of Pennyroyal, were presented to the writer with the request that he determine first, whether the sample was oil of pennyroyal, and secondly, if it was unadulterated. The sample referred to in this note was one of these.

* Read at the meeting of the New Jersey Pharmaceutical Association at Newark, June 9, 1920.

The sample measured only 15 Cc., and as it was desirable to retain at least a portion in the original container for court evidence, the quantity available for examination was not large.

The U. S. P., 8th Revision, defined Oleum Hedeoma as a volatile oil, obtained by distillation from *Hedeoma pulegoides* Linné. The sp. gr. was stated as 0.930 to 0.940, and the oil as soluble in two parts, by volume, of a mixture of alcohol 3 volumes, water 1 volume (approximately 70 percent alcohol by volume). "This is what is known in commerce as 'American Pennyroyal Oil.' " The later revision of the U. S. P. dismissed this title, and so we have now no official standard for Oleum Hedeoma.

A large portion of the oil of pennyroyal of commerce, however, is of European production, and is stated to be distilled from *Mentha pulegium* Linné. The European oil has a sp. gr. of 0.930–0.960, and is soluble in two parts of 70 percent alcohol. *Pulegone* is the most active constituent of both of the commercial varieties of pennyroyal oil, and is present in somewhat larger proportion in the European oil. It is a ketone $C_{10}H_{16}O$, in which the Carbonyl Group, CO, unites with two alcohol radicals. Its boiling point is given by several authorities as from 221° C. to 224° C.

The sample of oil under consideration was a limpid pale yellow liquid, having a distinct pennyroyal odor, with a mint-like tendency. The sp. gr. was 0.884, and it mixed clear in all proportions with 70 percent alcohol. The low specific gravity and the solubility at once indicated that the sample was not normal.

Ten Cc. was fractionally distilled from a small distilling flask, 5 Cc. distilled over and was collected at a temperature below 85° C. This portion responded to the ethyl acetate test and other reactions for ethyl alcohol, proving that the sample was not pure oil of pennyroyal, but a mixture of which 50 percent was alcohol.

The fraction distilling between 218° C. and 224° C. was collected, as this should contain the *pulegone*, the characteristic constituent of pennyroyal oil. It measured 1.6 Cc. corresponding to 16 percent in the sample, or, possibly, 32 percent in the original oil. It had the unmistakable odor of pennyroyal, greatly intensified and very persistent, and was soluble in 1.5 parts of 70 percent alcohol.

To prove that this was *pulegone*, two identifying tests were adopted. *Pulegone* being a ketone, the iodoform test was applied as a group reaction, and the response was prompt with copious production of iodoform. *Pulegone* can be reduced by nascent hydrogen to form a menthol. A small portion was dissolved in dehydrated alcohol, metallic sodium added; after the reaction was completed the solution was diluted with water and extracted with petroleum ether. On evaporating the solvent the residue gave the distinct odor and taste of a menthol. The quantity worked with did not permit of the making of melting point and optical rotation determinations.

From the above tests it was concluded that the sample was Pennyroyal Oil and mixed with alcohol to the extent of 50 percent.

NEW TESTS FOR THE IDENTIFICATION OF SPARTEINE AND GUAIAC.*

BY E. H. GRANT.

The following test for sparteine, the alkaloid of broom tops (*Cytisus scoparius* Linné) will detect 0.0005 gramme of the alkaloid, providing that interfering substances are absent. The alkaloid is extracted with chloroform from a slightly ammoniacal solution, extracted from the chloroform by dilute sulphuric acid, this latter solution is made slightly ammoniacal and the alkaloid is reëxtracted with chloroform. Other methods of purification may be used as the case requires. The chloroform solution of the alkaloid is evaporated in a small beaker. To the alkaloidal residue a small amount of bromine water is added. A yellow precipitate, or, in the presence of large amounts of spartein, an orange-colored oil, forms but dissolves on warming. The solution is evaporated just to dryness on the water bath. While the beaker is still hot, it is inverted over concentrated ammonia water. A beautiful pink color forms if spartein was present.

The principal points to be noted in making this test are, first, that the beaker must be removed from the bath just as soon as the residue from the bromination is dry. If this residue is overheated too long, the test fails. If the beaker is removed before the residue is quite dry, the pink color will not appear; but the beaker may be replaced on the water bath after it has been held over the ammonia and the rest of the water evaporated, then the beaker may again be inverted over the ammonia and the color will appear. Second, the beaker must be hot when inverted over the ammonia.

This test is very similar to the murexid test for caffeine, except as to a few necessary differences in manipulation. The reaction, however, cannot be the same. An examination of the published formulas for sparteine and murexid shows that their groupings are too dissimilar for one to be formed from the other.

The usual test for guaiac is the blue coloration given by it with various oxidizing agents. This test will often fail with old preparations of guaiac, especially those containing ammonia, such as the ammoniated tincture of guaiac. The following test was found to be very delicate and to give positive results with such old preparations as no longer gave the blue oxidation test.

A suitable amount of the sample is extracted with chloroform, the chloroform is drawn off and separated into two portions. One of these is evaporated to dryness and the residue treated with concentrated sulphuric acid. An intense red coloration indicates guaiac; the same coloration being given also by some saponins and resins. The other portion of chloroform is shaken with about an equal volume of bromine water. Sometimes, in the presence of guaiac, a sudden flash of purple or blue shoots through the chloroform just as the bromine dissolves in it. The chloroform layer is then separated and evaporated to dryness. On treating the residue with concentrated sulphuric acid, a brilliant green indicates guaiac.

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* Read before Scientific Section, A. Ph. A., city of Washington meeting, 1920.

A NOTE ON TINCTURE OF NUX VOMICA.

BY JOHN K. THUM.*

At the February meeting of the Philadelphia Branch of the American Pharmaceutical Association the writer read a paper[1] which recorded his experience in making several pharmacopoeial preparations with weaker alcoholic menstruums than the Pharmacopoeia requires. It was shown that several of the important tinctures could be made with weaker alcohol without impairing their efficiency or detracting from their appearance. The same can be said of tincture of nux vomica.

The present formula for making tincture of nux vomica is, to say the least, unsatisfactory from the standpoint of elegance. The ground drug contains considerable oil; one investigator stating that it may contain as much as 4.2 percent. The drug that the writer worked with contained 2.5 percent. Notwithstanding that, the Pharmacopoeia requires that the drug be extracted with a menstruum of three volumes of alcohol and one volume of water, evidently assuming that this will yield a clear preparation; this, however, is not the case, due to the presence of the oil.

There is no valid reason why the United States Pharmacopoeia should not permit the removal of the oil before percolating the ground drug for the preparation of this tincture. Permission is given in the present Pharmacopoeia for the removal of the oil in the preparation of tincture of strophanthus. The use of purified petroleum benzin is directed for the purpose. Of course, ether can be used, but for economical reasons benzin is preferable. It is of interest to note here that two tinctures in which ether was employed assayed slightly less than two in which benzin had been used for extraction of the oil. All the tinctures under consideration were made from the same lot of drug.

One tincture was made by macerating the ground drug for 48 hours in a warm place after first depriving it of the oil with purified petroleum benzin. The oil-free drug was thoroughly dried to rid it of all benzin odor, then moistened with official diluted alcohol, which also was used as the menstruum. The drug was then packed in a glass percolator and menstruum poured on until it began to drop through, when percolation was stopped. Sufficient menstruum was then poured on the drug to leave a stratum above it. After another 48 hours, percolation was allowed to proceed to the required volume. This tincture assayed 0.20 percent. It will be remembered that the Pharmacopoeia demands that the tincture should contain 0.25 gramme of the combined alkaloids of nux vomica in each 100 mils. This preparation besides being deficient in strength, was also somewhat inelegant in appearance, not possessing the clearness that a tincture should have. This inelegance in appearance was subsequently proven to be due to the low alcohol content in the menstruum, and the deficiency of the alkaloidal content was attributed to the same cause.

The procedure here outlined was carried out with various strengths of alcohol up to 750 parts of alcohol and 250 parts of water; the latter is the present official

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[1] J. A. PH. A., March, 1920, p. 249.

menstruum of the tincture. As one of the objects of this research was to conserve alcohol it was particularly gratifying to note that a tincture made with a menstruum of 650 parts of alcohol and 350 parts of water produced a preparation that was all that could be desired both from a pharmaceutical and a therapeutic standpoint. The alkaloidal content was as required by the Pharmacopoeia. That this menstruum was sufficient to extract all the alkaloids of this drug was shown by the failure of the marc to give any reaction with Mayer's reagent after further extraction.

Depriving the drug of its oil in no way depreciates its activity, as the oil therefrom gave no evidence of containing any alkaloid.

THE ANALYSIS OF MERCURIAL OINTMENT.*

BY JOSEPH L. MAYER.

The official method for the assay of Mercurial Ointment being too inaccurate and time consuming, I devised the following simpler and more accurate procedure.

Accurately weigh about 0.500 gramme of the ointment into a tared 100-Cc. beaker, warm gently; add about 50 Cc. of gasoline, stir with a glass rod to dissolve the fat, allow the mercury to subside, then carefully decant the liquid through a small filter paper and reject filtrate. Now place funnel and filter paper over the beaker containing the mercury; add 10 Cc. nitric acid through the paper, employing a pipette; wash with a small amount of water, and then place the beaker containing the mercury and nitric acid on a hot plate and heat gently until red fumes cease to be evolved; wash the contents into a large Erlenmeyer flask, dilute to about 150 Cc. with water, add 2 Cc. ferric ammonium sulphate test solution and titrate with tenth-normal KCNS V. S. until the appearance of a permanent, yellowish-red color.

Each Cc. of tenth-normal KCNS V. S. consumed corresponds to 0.01003 gramme of mercury.

Three assays made of a sample of blue ointment by this process yielded the following results: 30.034, 30.234 and 30.157 percent of mercury.

The accuracy, simplicity, and rapidity of this method commend it for inclusion in the Pharmacopoeia.

RESEARCH AND ANALYTICAL LABORATORIES,
OF THE
LOUIS K. LIGGETT CO.

TINCTURE OF VANILLA.[1]

BY K. A. BARTLETT.

While tincture of vanilla is a preparation that has been in use for a great many years, there has never been a satisfactory official formula for it. At the time of the last revision of the U. S. P. the formula therein was not satisfactory. A new formula was devised and included in the N. F. IV.

* Read before Scientific Section A. Ph. A., city of Washington meeting, 1920.

[1] Presented before Section on Practical Pharmacy and Dispensing, A. Ph. A., City of Washington meeting, 1920.

This formula, however, instead of being an improvement, was decidedly a step in the wrong direction. It is troublesome enough on a small scale and as a manufacturing proposition it is almost impossible. One of the faults common to the formulae of both the U. S. P. VIII and the N. F. IV is the fact that they direct mixing the sugar with the cut vanilla beans and then direct percolation of this mixture. The N. F. IV in addition to this fault, unnecessarily complicates matters by first macerating the cut beans with straight alcohol. This alcohol is then filtered off and diluted with an equal volume of water, this mixture then being used as a menstruum for the final percolation. In order to bring out the fault with this manner of manipulation it may be well to refer back to the actual preparation of these beans for market, where just prior to being tied into bundles and wrapped, they are given a thin coating of a fixed oil. This, together with the small amount of fixed oil that is naturally in the beans, readily explains why the above procedure is unsatisfactory. The initial maceration with straight alcohol dissolves the fixed oil and then on diluting the percolate with water an unsightly mixture results, due to the throwing of this fixed oil out of solution. When this mixture is poured on the percolator, containing the very viscid mixture of sugar and cut vanilla beans, the percolator rapidly clogs and renders percolation so difficult that it is impractical.

The following formula is submitted as one which has been in use for some time and one which gives very satisfactory results:

Vanilla, cut in small pieces	100 Gm.
Sugar, granular	200 Gm.
Dilute alcohol, a sufficient quantity to make	1000 mils.

Place the cut vanilla beans together with three hundred and twenty mils (320 mils) of dilute alcohol into a 1000-mil flask, preferably one with a wide mouth, and heat on a water bath under a reflux condenser for 6 hours, keeping the mixture nearly to the boiling point, but not high enough to cause any loss of alcohol. Allow to cool and strain the liquid through cheesecloth.

Then place the cut vanilla beans in a percolator, preparing the percolator as follows:—

In the bottom place a piece of filter paper large enough to cover the bottom and extend a short way up the sides of the percolator.

Then put in a layer of clean white sand, on top of that a layer of kieselguhr and then another layer of sand. Pack alternately a layer of vanilla beans and a layer of kieselguhr.

Pour on the strained liquid and percolate slowly, continuing percolation with diluted alcohol. Mix the sugar with the percolate as fast as it is received and dissolve by agitation. Continue percolation to obtain 1000 mils.

The continuous heating of the beans with a portion of the menstruum greatly facilitates extraction. There is no unsightly and troublesome precipitation of fixed oil and percolation is easy.

Anyone who has had experience with tincture of vanilla knows the difficulties attending its filtration and to overcome this I strongly recommend that a percolator prepared in the above described manner be used. Any excess of oil which may be extracted from the drug is immediately removed by the kieselguhr and sand, and the percolate comes brilliantly clear. If a good quality, clean sugar be used, filtration will be unnecessary.

In manufacturing the preparation on a larger scale the cut vanilla beans and

diluted alcohol may be placed in a clean still of suitable capacity, the lid tightly clamped down and then the mixture heated for the specified length of time.

The advantages of this formula over the present one are many, and I strongly recommend its adoption to replace the formula now official.

LABORATORIES OF
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ISO-ALCOHOLIC ELIXIRS.

BY BERNARD FANTUS.*

Aromatic elixir, which is intended to serve as a vehicle for alcoholic preparations and alcohol-soluble medicaments, falls short of its purpose by reason of its fixed alcohol content, which makes it suitable as a diluent only for hydro-alcoholic tinctures of rather low alcohol percentage, and as a vehicle for drugs that do not require strong alcohol for solution. This difficulty may, of course, easily be overcome by fortifying the elixir with alcohol, so as to give it the alcoholic strength required. It is, however, practically impossible for the prescribing physician to carry in his mind the alcoholic strength of the various menstrua used in the extraction of the drugs he employs, and it is not always possible for him to consult a reference book. The pharmacist, on the other hand, could easily adjust, with the aid of his official books, the proportion of alcohol in the elixir, so as to make it compatible with the medicament it is to carry. Indeed, this ought to be required of the pharmacist by making the aromatic elixir of the Pharmacopoeia "iso-alcoholic," *i. e.*, of an alcoholic strength adjustable to the requirements of the medicament for which it is to serve as a vehicle.

This would not make it necessary for the druggist to carry in stock elixirs of varying alcoholic strengths; as he could easily, by means of a table, adjust the strength of a standard elixir to the alcohol percentage demanded. With this in view, it might be well to reduce the alcoholic strength of aromatic Elixir to five percent, which is that of some of the "aqueous" elixirs of the National Formulary, such as the Compound Elixir of Almond, and the Aqueous Elixir of Glycyrrhiza. This reduction would have several advantages. The "aqueous" elixir would be much less likely to be sought after as an alcoholic beverage. Furthermore, it would reduce the expense of quite a number of preparations, such as the bromide elixirs and many other elixir solutions of water-soluble chemicals of the N. F., the alcohol contents of which are at present decidedly excessive.

The following modification of the official formula for aromatic elixir might therefore be proposed:

AROMATIC ELIXIR.

Compound Spirit of Orange	10 mils
Syrup	375 mils
Purified Talc	30 Gm.
Alcohol	50 mils
Distilled Water, a sufficient quantity to make	1000 mils

Mix the compound spirit of orange with the alcohol. To this solution add the syrup in several portions, agitating after each addition, and afterwards add in the same manner 560 mils

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of distilled water. Mix the purified talc intimately with the liquid, and then filter through a wetted filter, returning the first portions of the filtrate until a transparent liquid is obtained. Lastly, wash the filter with a 5% solution of alcohol in distilled water until the product measures 1000 mils.

TABLE FOR ADJUSTMENT OF ALCOHOL STRENGTH.

Elixir.	Alcohol.	Suitable for preparations of following alcohol strengths.
5 parts	+ 1 part	10–20%
4 parts	+ 1 part	20–30%
3 parts	+ 1 part	30–40%
2 parts	+ 1 part	40–50%
1 part	+ 1 part	50–60%
1 part	+ 2 parts	60–70%
1 part	+ 3 parts	70–80%
1 part	+ 4 parts	80–95%

This should be looked upon as merely a preliminary report. Should the 5% elixir be found deficient in keeping qualities, it might be necessary to raise its alcoholic strength somewhat. Its aromatic quality might be increased, if desired, by the use of terpeneless oils in the preparation of the Compound Spirit of Orange.

ELIXIRS OF NATIONAL FORMULARY.

The Compound Elixir of Almond of the N. F. is suitable for employment as an iso-alcoholic elixir without any change whatever in its formula. On the other hand, the Aqueous Elixir of Glycyrrhiza is precipitated when mixed with considerable quantities of alcohol; it is, therefore, unsuitable for this purpose.

The Compound Elixir of Vanillin might easily have its formula modified in such a way as to reduce its alcohol content to 5%—one-half of its present strength—and might then be used as an iso-alcoholic elixir.

The Compound Elixir of Cardamom might have its formula modified so as to reduce it to 5% alcohol strength. The amount of Compound Spirit of Cardamom would, in that case, also have to be reduced.

SUMMARY.

The suggestion is advanced to reduce the strength of all elixirs to a low alcohol standard, and to require the pharmacists to so adjust the alcohol percentage of these elixirs as to render them iso-alcoholic, *i. e.*, the alcoholic percentage required to prevent physical incompatibility with the medicament for which the elixir is used as a vehicle.

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DEPARTMENT OF COMMERCIAL INTERESTS

CONDUCTED BY DR. ROBERT P. FISCHELIS.

A noted authority has said that success in advertising and selling depends on the following fundamentals:

1. You must have the interest of your customer at heart.

2. You must know everything possible about the article or articles which you are selling.

3. You must have faith in what you are selling and faith in the man or firm or organization for which you are working.

4. You must believe in yourself and in your ability to sell.

5. You must have the right method of presenting your article to the customer.

If these points are kept in mind and the salesman makes a study of them, with the intention of elaborating and increasing his knowledge of the principles involved in making sales, he must of necessity be a success.

For the purpose of a thorough consideration of selling and advertising as it applies to the retail drug store, let us consider the subject under three headings:

1. The store keeper or seller.

2. The goods to be sold.

3. The buyer.

In this article we will consider only the first of these, namely, the seller, leaving the discussion of the goods and the buyer for future consideration.

The pharmacist, because of the two-fold nature of his calling, must be a student of psychology. He must bear in mind that in any community there are groups of people with different types of mind, and each type of mind responds to different stimuli. These types fall into several classes and almost any customer can be placed in one of them. Perhaps it is easiest to explain what is meant by the various types of mind that are encountered among drug store customers by referring to the various types of students in our colleges.

All those who have been members of the pharmacy classes in any of our colleges will agree that the student body is quite representative of any body of human beings that may be gathered together anywhere. As many different types of mind are represented in the class room as may be found in any large gathering.

In the eyes of the teacher all of these students classify themselves into three groups.

First, there is the group which acquires knowledge by hearing a lecture or answers to questions propounded by the instructor. In fact, one of the chief arguments in favor of the lecture system of teaching is that a certain percentage of students acquire knowledge by hearing the subject discussed by an instructor.

Second, there are those who must see the things that are being talked about. In other words, they learn by watching a demonstration, or seeing the experiment described by the lecturer actually carried out. They cannot visualize a process from the words used in the description of the lecturer as can the first group. They must actually see the process in operation.

Third, we have the group that does not acquire knowledge quickly by either of the foregoing methods and must actually do things before an impression is

made upon the mind sufficient to retain the knowledge imparted. The student in this group can go into the laboratory and set up apparatus, conduct experiments and acquire an excellent knowledge of the subject by carrying out the actual operations involved, but he is absolutely lost when he must acquire this knowledge only by listening or seeing a demonstration.

Most of the members of these three groups learn in more than one way, but they learn best by one of the methods outlined, and it is for this reason that modern teaching includes all three methods.

Applying the above examples to the customers of a retail pharmacy, we have the group which can be convinced of the value of an article by a little explanation of its merit on the part of the seller.

Then there is a group which cannot be convinced without actually seeing the article and watching the salesman manipulate it, as it is to be used.

The third group is not satisfied with seeing the salesman handle the article and talk about it, but they must convince themselves by actually trying the thing out themselves and handling it to make sure that it will do the same thing in their hands that it has done in the hands of the salesman.

It is a difficult matter to size up a customer and determine to which class he belongs, therefor the skilful salesman combines all three methods in selling his customers. He talks, he demonstrates, and he permits the customer to demonstrate for himself.

Long acquaintance with customers, of course, will enable the salesman to decide in a moment how to convince his man of the value and necessity of the article which he is trying to dispose of. It is highly essential for pharmacists to know their customers, and it is also highly essential to have the interest of the customer at heart.

The pharmacist, perhaps, enjoys the confidence of his customer to a much greater extent than does the average merchant. He is expected to have a higher class of goods, because it is presumed that his superior knowledge enables him to buy goods of better quality.

This thought should be fostered by the pharmacist, not only in theory but in actual practice. His merchandise should always be of the better class and he should take the time to let his customer know the sources of various commodities because such information arouses interest, pride in possession and respect for the pharmacist.

The interests of every customer should be studied and kept in mind. Nothing pleases men or women more than to feel that "their druggist" knows just the kind of everything they want. When that point is reached, it takes exceedingly great pressure and unusual circumstances to spirit those customers away from "their" druggist. There should be no delay in cultivating such "customer interest" and "customer loyalty."

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Conducted by H. V. Arny, Reporter on the Progress of Pharmacy, Chairman of the Committee on Research.

On these pages, each month, will be found a list of articles on pharmaceutical research that appear in the pharmaceutical and other scientific journals of the world. Whenever possible, the list appearing a certain month will record articles appearing in American journals of the preceding month and articles appearing in foreign journals will be recorded as quickly as possible after the journals reach the Reporter.

All articles appearing in these lists will be presented in abstract form in the bound volumes of the YEAR BOOK, which will be issued as soon after the end of the year represented as editing and printing conditions permit. Those desiring abstracts immediately can obtain same for a fee of one dollar each by communicating with H. V. Arny, 115 West 68th St., New York, and arrangements can also be made for securing photographic reproduction of entire articles at moderate prices when such are desired.

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Daels, F.
Quantitative assay of oxymethyl anthraquinones
Acad. Roy. Med. Belg.; through *J. pharm. chim.*, 21 (Apr. 16, 1920), 316

DeJong, A. W. K.
Truxillic acids
Proc. K. Akad. Wetensch.; through *J. Soc. Chem. Ind.*, 39 (May 15, 1920), 348A

Ewe, G. E.
Caffeine from coffee soot
Tea. Coff. Trade G.; through *Am. J. Pharm.*, 92 (May 1920), 310

Gascard, A.
Myricyl alcohol formula
Compt. rend.; through *J. Soc. Chem. Ind.*, 39 (May 31, 1920), 376A

Grünhut, L.
Chemistry of levulinic acid
Chem. Ztg.; through *Pharm. Weekblad*, 57 (May 29, 1920), 621

Hasse, P.
Detection of methyl alcohol in spirits
Pharm. Zent.; through *J. Soc. Chem. Ind.*, 39 May 15, 1920), 345A

Jamieson, G. S., and Baughman, W. F.
Chemical composition of cotton-seed oil
J. Am. Chem. Soc., 42 (June 1920), 1197

Karrer, P.
Configuration of glucosides
Helv. Chim. Acta; through *J. Soc. Chem. Ind.*, 39 (May 15, 1920), 348A

Karrer, P., and Weidmann, H.
Synthesis of beta-gaultherin
Helv. Chim. Acta; through *J. Soc. Chem. Ind.*, 39 (May 15, 1920), 348A

Kubota, S.
Pharmacology of allocaine S.
J. pharmacol.; through *J. pharm. chim.*, 21 (Apr. 16, 1920), 321

Labat, A.
Distinguishing vanillin and heliotropine
Bull. Soc. Pharm. Bord.; through *Pharm. Weekblad*, 57 (May 29, 1920), 592

Lescoeur
Hypobromite reaction of urea
J. pharm. chim.; through *Pharm. Era*, 53 (June 1920), 167

Levy and Cullen
Deterioration of strophanthin in aqueous solution
J. Exp. Med.; through *Am. J. Pharm.*, 92 (May 1920), 355

Low, W. H.
Soy bean oil
J. Ind. Eng. Chem., 12 (June 1920), 572

Lucius
Separation of dextrose and levulose
Z. Unters. Nahr. Genussm.; through *Drug. Circ.*, 64 (June 1920), 217

Macri, V.
Color reaction for oxalates
Boll. Chim. Farm.; through *J. Soc. Chem. Ind.*, 39 (May 31, 1920), 384A

Mailhe, A.
Catalytic production of nitriles
Bull. Soc. Chim.; through *J. Soc. Chem. Ind.*, 39 (May 31, 1920), 384A

Meyer, A.
Assay of thiophene in benzene
Compt. rend.; through *J. pharm. chim.*, 21 (Apr. 16, 1920), 327

Murayama, Y.
Oil of Mosla punctata
J. Pharm. Soc. Japan; through *J. pharm. chim.*, 21 (Apr. 16, 1920), 322

Nelson, E. K.
Composition of oil chenopodium
J. Am. Chem. Soc., 42 (June 1920), 1204

Nelson, E. K.
Oil of *Rubieva multifida*
J. Am. Chem. Soc., 42 (June 1920), 1286

Pickett, O. A.
Assay of acetic acid in acetates
J. Ind. Eng. Chem., 12 (June 1920), 570

Porcher, C.
Effect of formaldehyde on the lactose assay of milk
Ann. Falsif.; through *J. Soc. Chem. Ind.*, 39 (May 15, 1920), 346A

Speakman, H. B.
Acetone and butyl alcohol by fermentation
J. Ind. Eng. Chem., 12 (June 1920), 581

Rupp and Lehmann
Assay of iodine in organic preparations
Arch. Pharm.; through *Drug. Circ.*, 64 (June 1920), 218

Senderens, J. B.
Hydrogenation of lactose
Compt. rend.; through *J. pharm. chim.*, 21 (Apr. 16, 1920), 328

Tunmann, O.
Detection of nicotine
Apoth Ztg.; through *Pract. Drug.*, 38 (May 1920), 34

Verda, A.
Examination of neosalvarsan
Schweiz. Apoth. Ztg., 58 (May 27, 1920), 280

Wadsworth, R. V.
Solubilities of hexamethylenamine
Zsch. angew. chem.; through *J. Soc. Chem. Ind.*, 39 (May 31, 1920), 383A

Wolff
Detection of methyl alcohol
Chem. Ztg.; through *Drug Circ.*, 64 (June 1920), 217

CLINICAL AND DIAGNOSTIC METHODS.

Arnold, R.
Ovarian cyst consisting of cholesterol
J. pharm. chim., 21 (Apr. 16, 1920), 305

Cammidge
Assay of sugar in the blood
Practioner; through *Am. J. Pharm.*, 92 (May 1920), 352

Grigault, A., Brodin, P., and Rouzin
Rise in glucose content of the blood in nephritis
J. pharm. chim., 21 (Apr. 16, 1920), 329

Saigusa
Amount of diastase in normal urine
J. Am. Med. Assoc.; through *Am. J. Pharm.*, 92 (May 1920), 353

CORRESPONDENCE

PHARMACEUTIC EDUCATIONAL REQUIREMENTS IN GOVERNMENT SCHOOLS.

While the following communications might have been abstracted, there is much of importance contained therein that should be of record, hence, it has been deemed advisable to print in full.

HON. NEWTON D. BAKER,
Secretary of War,
Washington, D. C.:

Information has recently come to me to the effect that a training school for pharmacists has been established at Camp Pike, Ark. For the past twenty years the best colleges of Pharmacy in this country have worked together in an organization known as the American Conference of Pharmaceutical Faculties. Conditions surrounding pharmaceutical education were deplorable at the time this organization was formed. Improvement has been slow, but many reforms have been inaugurated both in the way of higher entrance requirements and improved curricula. By unanimous agreement all member schools will require four years of high school training before matriculation, after 1923. The minimum requirement is now two years of high school work, though the majority of schools already require four.

Several states by legislative enactment require applicants for registration as pharmacists, to have had the equivalent of high school graduation before taking up pharmaceutical training. This leads me to the object of this communication. I am writing you, as President of the above-mentioned organization. I feel that the Federal Government, in the training of pharmacists for the Army and Navy, should at least make the conditions of both entrance into and graduation from its institutions, correspond to the Conference State Board requirements. If this should not be done, it will inevitably work an injustice to those men taking the course in the Army and later finding themselves disqualified for examination as civilian pharmacists.

Colonel H. D. Arnold, formerly in the office of the Surgeon-General of the Army, and Dr. A. G. Dumez, U. S. P. H. Service, are rather intimately acquainted with the matter of pharmaceutical education, and would, I am sure, aid in the proper adjustment of this matter. It is one rather far-reaching in its effect upon the training for a line of service, whether military or civil, which affects the health and welfare of the whole citizenship. If in my official capacity or personally, I can render assistance in this regard, please command me.

Richmond, Virginia, April 22, 1920. (Signed) WORTLEY F. RUDD.

MR. WORTLEY F. RUDD,

Richmond, Virginia:

Careful consideration has been given your letter of April 22nd, with reference to the training of pharmacists in connection with the vocational training program now in operation in the Army.

I agree most heartily that we should coöperate to maintain the standard in pharmaceutical education which you and your colleagues have labored to establish. I assure you that, in all our vocational training work, we shall not establish a lower standard than that which now prevails in civil life for any of the vocations for which we shall conduct courses of training.

We have called to our assistance civilian educators of the highest professional attainments in establishing our courses of instruction. In addition, we are asking the coöperation and assistance of those in civil life, who, like yourself, are interested in the educational work which the Army is doing, and who are desirous that the highest possible standard of achievement in knowledge and skill be maintained.

In the pharmaceutical course, as in all other courses, we shall establish standards of knowledge and accomplishment that will insure that every graduate will have reached the minimum standard which has been established in civil life for this particular line of training. Out of justice to the student and in accordance with what we consider the most practicable and efficient method, we cannot establish a time requirement with reference to school work, such as now prevails to a great extent in the educational world. We will, however, establish standards of achievement in knowledge and skill which will insure the accomplishment of the end which is sought by the prevailing time schedule requirement of civilian educational institutions. We shall ask your assistance in establishing such standards of achievement for the line of training in which you are particularly interested.

We feel quite sure that the establishment of standards of achievement in knowledge and skill will do far more towards establishing and maintaining the highest possible standard among our graduates than could possibly be accomplished by any time-schedule requirements.

We have established at Camp Grant, Ill., a school, or a combination of schools, in which courses of study and standards of achievement and accomplishment for various lines of educational and vocational training are being worked out for the Army as a whole by Civilian Experts. We shall be very pleased to have you visit this school and to have you investigate fully the principles upon which we are working. (Signed) NEWTON D. BAKER.

Washington, D. C., May 20, 1920.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

CHICAGO

The 111th regular meeting of the Chicago Branch of the American Pharmaceutical Association was held Friday evening May, 28th, at the University of Illinois School of Pharmacy building, at 8.00 o'clock. President Clark presided. The attendance was large.

The evening was devoted to reports from delegates and others who attended the Annual Meeting in Washington, and the decennial Pharmacopoeial Convention. Professor Day reported for the general activities of the A. Ph. A. meeting, calling attention to the principal items of business, the considerable number of very fine papers and addresses, and the very pleasant features of entertainment at this meeting.

S. C. Henry discussed in particular his impressions of the Pharmacopoeial Convention. He called particular attention to the fact that though retail druggists were well represented at this convention very few were elected to the Revision Committee. He deplored this and believed that if actual retail pharmacy was more fully represented on this Committee, there would be a tendency to make the book more applicable to the drug store.

F. W. Meissner, of La Porte, Ind., formerly a trustee of the Pharmacopoeial Convention, spoke briefly, calling attention particularly to the splendid financial standing of the Convention and the fine opportunity the balance of some $40,000 gives to the incoming Revision Committee for research.

Prof. C. M. Snow spoke upon several phases of the A. Ph. A. activities, dwelling especially on the most excellent addresses of prohibition officers Kraemer and Gaylord. He also called attention to the fact that the House of Delegates should be strengthened in its personnel and in its activities.

Secretary Gathercoal called the attention of the meeting to the fact that this was the last meeting of the spring, but that already plans were being made for a big meeting in October, at which the 135 Soldier and Sailor members, resident in Chicago, would be given particular entertainment, and called for expressions of opinion as to the most desirable form of this entertainment. It was the opinion of several, including some of our S. and S. members, that no features of the war should be included but rather strictly pharmaceutical material. So it was decided to call upon pharmacists of foresight to present, at this October meeting, the immediate future of American pharmacy to these young men.

Prof. A. H. Clark talked most interestingly about the many beautiful and attractive features of the city of Washington and the great public buildings, illustrating the talk with 100 lantern slides, many of them just completed from pictures the speaker had taken at the meeting.

E. N. GATHERCOAL, *Secretary.*

COMMITTEE REPORTS

REPORT OF THE NATIONAL FORMULARY COMMITTEE.

To THE AMERICAN PHARMACEUTICAL ASSOCIATION:*

The National Formulary Committee appointed for the fourth revision of the National Formulary has not yet fairly begun its work. The committee consists of six retail pharmacists, five pharmacy teachers, three who are connected with manufacturing establishments and one physician. This has been commented upon by Professor J. U. Lloyd as an exceptionally well-balanced committee.

*City of Washington meeting, 1920.

The committee organized promptly, and has subdivided the work of revision into thirteen sub-committees, of which eight are concerned with the formulas and the others with general phases of revision work.

The committee has been considering very carefully the scope and policy of the Formulary. The inclusion of this work as a standard in the Food and Drugs Act of 1906 has placed the book on a very different base from that of the original, and the policy of the Formulary is not yet clear.

Originally the intent was to provide standard formulas for all preparations not included in the Pharmacopoeia which were in common use by physicians. Usage was the main criterion of acceptance, the Formulary assumed no responsibility for therapeutic values, and the aim was to supply standard formulas for preparations that physicians wished to employ. This meant a copying of the flavor, color and other physical properties of preparations in use.

But it is becoming more apparent that if the Formulary is to occupy a place as a standard, it must be more than a simple formulary for popular medicinal preparations. It must have a definite scope and plan which will be of more value to physicians and pharmacists than a book of well selected formulas if it is to hold an influence above other formularies. What this policy shall be is not easy to decide. The preceding committee had some vigorous discussions on the subject, but did not succeed in coming to a clear understanding. The present committee, therefore, lacks an established policy for the N. F. The first policy has been taken away by imposing upon it a standing which was not contemplated in the original plan, and the future aims have not yet become instituted.

Perhaps the most difficult question is what part, if any, therapeutics should play in the acceptance or construction of formulas. While physicians are, and should be, the final judges of therapeutic value, yet they look to pharmacists in considerable measure to furnish formulas which are therapeutically desirable—or at least not objectionable. The fact that physicians employ very largely preparations which are not therapeutically approved by authorities in that subject does not mean that questionable therapeutics is preferred but only that the preparations are desirable for other reasons beside their therapeutic qualities.

The Formulary, designed and revised by pharmacists, cannot presume to pose as a standard for therapeutic values, as does the Pharmacopoeia. But between the exclusive therapeutic standards of the Pharmacopoeia, established mainly by pharmacologists and physicians, and the popular remedies established by commercial houses, there may be a desirable means for the National Formulary to institute. This is the first question to be considered by the committee, and it has already been discussed in some measure.

Other fundamental questions are the alcoholic strength of some preparations, particularly of the elixirs, the future of the medicated wines, the continuance or modification of narcotic preparations, and our relations to the medical profession.

These are far-reaching questions and they can best be settled in conference. The committee is, therefore, planning for a meeting in the near future[1] to discuss and decide upon these and other questions regarding the scope and policy of the Formulary. When the fundamental questions shall have been decided, and we hope that will be soon, the detail work of revision will follow promptly.

(Signed) WILBUR L. SCOVILLE, *Chairman.*

COUNCIL BUSINESS

COUNCIL MEETINGS, 1919–1920.

The sixth meeting of the Council for 1919–20 was held at the Willard Hotel, Washington, D. C., on Monday, May 10, 1920, at 7.20 P.M., Chairman L. C. Hopp, presiding.

Present: Messrs. J. H. Beal, W. B. Day, Clair A. Dye, E. G. Eberle, F. R. Eldred, J. W. England, R. P. Fischelis, H. C. Fuller, J. G. Godding, S. L. Hilton, L. C. Hopp, J. A. Koch, R. A. Lyman, E. H. LaPierre, C. H. LaWall, W. F. Rudd, E. A. Ruddiman, L. E. Sayre, F. E. Stewart, H. M. Whelpley and F. J. Wulling.

The minutes of the previous meeting were read and approved.

A communication from the Section on Commercial Interests was read as follows:

[1] Held in Longport, N. J., July 1, 1920.

The following recommendation to the Council from the Commercial Interests Section was presented:

"That this Association, through the Council, go on record as condemning manufacturers in this country who may be supplying representatives of other countries with narcotics which are being used for illegitimate purposes."

CHARLES O. LEE,
Secretary of Commercial Interests Section.

Adopted.

The report of the Committee on Nominations for Council Committees for 1920–21 was presented by Chairman Day, as follows:

COMMITTEES OF THE COUNCIL.

Executive Committee.

C. Herbert Packard, Boston, Mass.
H. M. Whelpley, St. Louis, Mo.
A. G. DuMez, *Secretary*, Washington, D. C.
E. G. Eberle, Philadelphia, Pa.
Wm. B. Day, Chicago, Ill.
C. H. LaWall, *Chairman*, Philadelphia, Pa.
W. F. Rudd, Richmond, Va.
J. H. Beal, Urbana, Ill.

Committee on Finance.

J. A. Koch, *Chairman*, Pittsburgh, Pa.
Chas. E. Caspari, St. Louis, Mo.
G. M. Beringer, Camden, N. J.

Committee on Publication.

J. W. England, *Chairman*, Philadelphia, Pa.
C. A. Mayo, Cincinnati, O.
Clyde L. Eddy, New York, N. Y.
H. B. Mason, Detroit, Mich.
E. L. Newcomb, Minneapolis, Minn.

Ex-officio Members—The Editor, Reporter on the Progress of Pharmacy, General Secretary and Treasurer.

Committee on Invested and Trust Funds.

Wm. B. Day, *Chairman*, Chicago, Ill.
E. G. Eberle, Philadelphia, Pa.
Frederick J. Wulling, Minneapolis, Minn.
H. M. Whelpley, *ex-officio*, St. Louis, Mo.

Committee on Centennial Fund.

C. H. Packard, *Chairman*, Baltimore, Md.
Wm. B. Day, Chicago, Ill.
J. A. Koch, Pittsburgh, Pa.

Committee on Transportation.

H. H. Schaefer, *Chairman*, New York, N. Y.
Lewis C. Hopp, Cleveland, Ohio
H. M. Whelpley, St. Louis, Mo.
Charles G. Merrell, Cincinnati, O.
E. F. Kelly, Baltimore, Md.
W. B. Day, Chicago, Ill.
J. L. Lengfeld, San Francisco, Cal.
E. Floyd Allen, Minneapolis, Minn.
Local Secretary, New Orleans, La.
W. S. Elkins, Jr., Atlanta, Ga.
T. J. Bradley, Boston, Mass.
Chas. J. Clayton, Denver, Colo.

The General Secretary and Local Secretary, *ex-officio* members.

Committee on National Formulary.

W. L. Scoville, *Chairman*, Detroit, Mich.
Clyde M. Snow, Chicago, Ill.
Otto Raubenheimer, Brooklyn, N. Y.
Leonard A. Seltzer, Detroit, Mich.
Harry V. Arny, New York, N. Y.
H. Engelhardt, Baltimore, Md.
E. L. Newcomb, Minneapolis, Minn.
E. Fullerton Cook, Philadelphia, Pa.
H. A. B. Dunning, Baltimore, Md.
Samuel L. Hilton, Washington, D. C.
Charles H. LaWall, Philadelphia, Pa.
George M. Beringer, Camden, N. J.
P. Henry Utech, Meadville, Pa.
Bernard Fantus, M.D., Chicago, Ill.
O. A. Farwell, Detroit, Mich.

Committee on Standards.

John G. Roberts, Philadelphia, Pa.....Term expires 1921
Otto Raubenheimer, Brooklyn, N. Y.....Term expires 1921

George D. Rosengarten, Philadelphia, Pa.....Term expires 1921
O. A. Farwell, Detroit, Mich.....Term expires 1921
George M. Beringer, Camden, N. J.....Term expires 1922
H. H. Rusby, Newark, N. J.....Term expires 1922
F. R. Eldred, Indianapolis, Ind.....Term expires 1922
John M. Francis, Detroit, Mich.....Term expires 1922
Elmer E. Wyckoff, Brooklyn, N. Y.....Term expires 1923
J. A. Koch, Chairman, Pittsburgh, Pa.....Term expires 1923
L. D. Havenhill, Lawrence, Kans.....Term expires 1923
E. L. Newcomb, Minneapolis, Minn.....Term expires 1923
Henry Kraemer, Ann Arbor, Mich.....Term expires 1924
Eustace H. Gane, New York City, N. Y.....Term expires 1924
B. L. Murray, Rahway, N. J.....Term expires 1924
W. A. Puckner, Chicago, Ill.....Term expires 1924

Committee on Unofficial Formulas.

W. L. Scoville, Detroit, Mich.....Term expires 1921
W. H. Glover, Lawrence, Mass.....Term expires 1921
Curt P. Wimmer, New York, N. Y.....Term expires 1921
John K. Thum, Philadelphia, Pa.....Term expires 1922
I. A. Becker, Chicago, Ill.....Term expires 1922
Clarissa M. Roehr, San Francisco, Cal.....Term expires 1922
Clarence G. Spalding, New Haven, Conn.....Term expires 1923
E. Fullerton Cook, Philadelphia, Pa.....Term expires 1923
William Gray, Chicago, Ill.....Term expires 1923
J. Leon Lascoff, New York, N. Y., Chairman.....Term expires 1924
H. A. B. Dunning, Baltimore, Md.....Term expires 1924
P. Henry Utech, Meadville, Pa.....Term expires 1924
Otto Raubenheimer, Brooklyn, N. Y.....Term expires 1925
F. W. Nitardy, Denver, Colo.....Term expires 1925
C. H. LaWall, Philadelphia, Pa.....Term expires 1925

Commission on Proprietary Medicines.

W. H. Cousins, Dallas, Texas.....Term expires 1921
John C. Wallace, New Castle, Pa.....Term expires 1922
Charles E. Caspari, St. Louis, Mo.....Term expires 1923
S. C. Henry, Philadelphia, Pa.....Term expires 1924
J. H. Beal, Chairman, Urbana, Ill.....Term expires 1925

American Pharmaceutical Research Committee.

George M. Beringer, Camden, N. J.....Term expires 1921
Henry Kraemer, Ann Arbor, Mich.....Term expires 1921
Julius A. Koch, Pittsburgh, Pa.....Term expires 1922
Edward Kremers, Madison, Wis.....Term expires 1922
Charles H. LaWall, Philadelphia, Pa.....Term expires 1923
H. V. Arny, Chairman, New York, N. Y.....Term expires 1923
George D. Beal, Urbana, Ill.....Term expires 1924
H. M. Whelpley, St. Louis, Mo.....Term expires 1924
F. R. Eldred, Indianapolis, Ind.....Term expires 1925
Wilbur L. Scoville, Detroit, Mich.....Term expires 1925

On motion of H. M. Whelpley, seconded by S. L. Hilton, it was agreed that the report be received and referred to the first session of the Council of 1920–21.

On motion of S. L. Hilton, seconded by C. H. LaWall, it was agreed that the Council of 1919–20 adjourn to immediately reconvene for the organization of the Council of 1920–21.

Adjourned.

J. W. ENGLAND, *Secretary.*

COUNCIL MEETING, 1920–21.

The first or reorganization session of the Council for 1920–21 was held at the Willard Hotel, Washington, D. C., on Monday, May 10, 1920, at 8 P.M., L. C. Hopp acting as temporary Chairman.

Present: Messrs. H. V. Arny, J. H. Beal, C. E. Caspari, E. Fullerton Cook, W. B. Day, Clair A. Dye, E. G. Eberle, F. R. Eldred, J. W. England, H. C. Fuller, S. L. Hilton, L. C. Hopp, Ivor Griffith, J. Hostmann, E. F. Kelly, J. A. Koch, E. H. LaPierre, C. H. LaWall, R. A. Lyman, F. W. Nitardy, W. F. Rudd, L. E. Sayre, L. A. Seltzer, C. M. Snow, F. E. Stewart, H. M. Whelpley, F. J. Wulling, A. G. DuMez, C. O. Lee, Curt P. Wimmer and E. Spease.

F. J. Wulling stated that W. A. Frost, of Minneapolis, Minn., had recently been elected as Council Representative from the Northwestern Branch to succeed him, and asked that the action of the Branch be approved, and that Mr. Frost, who was present, be permitted to vote, which was agreed to.

The election of officers was then held.

Lewis C. Hopp was nominated for Chairman, but declined re-election.

Charles H. LaWall was nominated for Chairman and elected.

On motion of F. E. Stewart, seconded by S. L. Hilton, a rising vote of thanks was passed to L. C. Hopp for his services as Chairman of the Council.

Charles E. Caspari was nominated for Vice-Chairman and elected.

On motion of C. A. Dye, seconded by W. F. Rudd, A. G. DuMez was nominated for Secretary.

On motion of W. B. Day, seconded by S. L. Hilton, J. W. England was nominated for Secretary.

The following tellers were approved by the Chairman to conduct the elections: Jeannot Hostmann, Chas. O. Lee and E. F. Kelly.

John F. Hancock, of Baltimore, President of the Association for 1873–74, was unanimously elected Honorary President for 1920–21.

The tellers reported that thirty votes had been cast for Secretary—seventeen for Dr. DuMez and thirteen for Mr. England. Mr. England did not vote.

Dr. DuMez was then declared elected, and assumed the duties of Secretary.

J. W. ENGLAND, *Secretary pro tem.*

The election of officers of the Council having been completed, the Council proceeded with its business, Chairman Charles H. LaWall presiding.

On motion of J. H. Beal, seconded by W. B. Day, a rising vote of thanks was passed to J. W. England for his long and faithful service as Secretary of the Council.

Nominations for officers of the Association were made. The following were elected, the Secretary being instructed to cast a unanimous ballot in the affirmative in each case:

General Secretary, William B. Day.

Treasurer, H. M. Whelpley.

Reporter on the Progress of Pharmacy, H. V. Arny.

Editor of the Journal, E. G. Eberle.

On motion of James H. Beal, seconded by S. L. Hilton, it was decided that the election of the Local Secretary be postponed until the New Orleans members had been consulted with, and that this officer then be elected by ballot.

William B. Day, Chairman of the Committee on Nominations, read his report and submitted a list of nominees for the committees of the Council for 1920–1921. On motion of Jeannot Hostmann, seconded by Charles E. Caspari, the report was approved as read and the Secretary instructed to cast an affirmative ballot for the nominees *en bloc*. They were elected. (For list see Sixth Meeting of the Council.)

It was moved by S. L. Hilton and seconded by H. V. Arny, that the Council authorize the Treasurer to purchase an adding machine to assist him in the keeping of his accounts.

Frank R. Eldred suggested that the Treasurer might find it more advantageous to enter into an arrangement with some trust company which would do this work for him.

The original motion, amended to permit the Treasurer to act on Dr. Eldred's suggestion if it was found to be advisable, was passed.

On motion of H. M. Whelpley, seconded by James H. Beal, it was decided that, hereafter, the Council meet at 10.00 A.M. the day preceding the opening of the annual convention of the Association in order to provide ample time for the transaction of its business which is constantly increasing. To expedite the work as much as possible, the Secretary was instructed to notify the members some time in advance of the date of this meeting of the business which will demand their attention.

A. G. DuMez, *Secretary.*

COUNCIL LETTERS.

A. PH. A. COUNCIL NO. 1.

WASHINGTON, D. C., June 11, 1920.

TO THE MEMBERS OF THE COUNCIL:

1. *Salutatory Message from Chairman LaWall.*

The following is a message received from Chairman LaWall, June 5, 1920:

"The Council of the A. Ph. A. is an administrative body to which is entrusted much of the important work of the organization. To function at all, it must be composed of active workers who feel a sense of the responsibility which accompanies the honor of election to this body.

"To function properly in the interests of the organization which it represents, the members must ever keep in mind that infallibility is not a human attribute and that constructive work can be done only where there is mutual respect for motives and views, even where differences of opinion occur.

"Let us make an effort, therefore, to work harmoniously and constructively for the best interests of the organization which we all love.

"Let us remember that when a majority have placed themselves upon record, if all available factors for judging a question have been submitted, it is the duty of the minority to accept the decision without demur. Our deliberations, although by mail and therefore slow, will be conducted with regard to proper parliamentary procedure.

"Your Chairman, therefore, will frequently need and ask advice and coöperation from those who are more experienced in this work and asks your patience as well as your aid until a smoothly working system is evolved."

Sincerely yours,

CHARLES H. LAWALL.

2. *List of Members of the Council for 1920–21.*

Arny, H. V., 115 W. 68th St., New York, N. Y.
Beal, James H., 801 W. Nevada St., Urbana, Ill.
Caspari, Charles E. (Vice-Chairman), 2108 Locust St., St. Louis, Mo.
Cook, E. Fullerton, 145 N. 10th St., Philadelphia, Pa.
Day, Wm. B., 701 South Wood St., Chicago, Ill.
Dohme, Alfred R. L., Pratt & Howard Sts., Baltimore, Md.
DuMez, A. G. (Secretary), Hygienic Laboratory, Washington, D. C.
Dye, Clair A., Ohio State Univ., Columbus, Ohio.
Eberle, Eugene G., Bourse Bldg., Philadelphia, Pa.
Eldred, Frank R., 3325 Kenwood Ave., Indianapolis, Ind.
Fennel, C. T. P., 614 W. Court St., Cincinnati, Ohio.
Frost, W. A., Selby & Western Aves., St. Paul, Minn.
Fuller, H. C., 1845 B St., N. W., Washington, D. C.
Griffith, Ivor, Stetson Hospital, Philadelphia, Pa.
Hancock, John F., 521 W. Lombard St., Baltimore, Md.
Hensel, Samuel T., Hotel West Court, 1415 Glenarm St., Denver, Colo.
Hilton, Samuel L., 1033–22nd St., N. W., Washington, D. C.
Hopp, Lewis C., 1104 Euclid Ave., Cleveland, Ohio.
Hostmann, Jeannot, 115 W. 68th St., New York, N. Y.
Kelly, E. F., Lombard and Green Sts., Baltimore, Md.
Koch, J. A., Bluff and Pride Sts., Pittsburgh, Pa.
LaPierre, E. H., 80 River St., Cambridge, Mass.
LaWall, C. H. (Chairman), 39 South 10th St., Philadelphia, Pa.
Lee, Charles O., Purdue University, W. Lafayette, Ind.

Lyman, R. A., 1649 S. 21st St., Lincoln, Nebr.
Mason, Harry B., P. O. Box 484, Detroit, Mich.
Mayo, Caswell A., care W. S. Merrell Co., Cincinnati, Ohio.
Noble, J. Merner, 500 N. Commercial St., St. Louis, Mo.
Packard, C. Herbert, 46 Maverick Sq., E. Boston, Mass.
Porterfield, W. A., 61 Broadway, Fargo, S. D.
Roehr, Clarissa M., University Hospital, San Francisco, Calif.
Rudd, Wortley F., 1716 Grove Ave., Richmond, Va.
Sayre, L. E., University of Kansas, Lawrence, Kans.
Seltzer, L. A., 32 Adams St., W., Detroit, Mich.
Snow, Clyde M., 701 South Wood St., Chicago, Ill.
Spease, Edward, 1483 E. 134th St., Cleveland, Ohio.
Stewart, Francis E., 11 W. Phil-Ellena St., Philadelphia, Pa.
Whelpley, Henry M., 2342 Albion Place, St. Louis, Mo.
White, William R., 314 Hancock St., Nashville, Tenn.
Wimmer, Curt P., 115 W. 68th St., New York, N. Y.
Wulling, F. J., University of Minnesota, Minneapolis, Minn.
Total number—41.

Note.—By act of the Council on May 10, 1920, the election of the Local Secretary was postponed until some future date. When this officer has been elected, the Council will consist of 42 members.

The following Committees should be added to the list printed in the minutes of Sixth Council meeting.

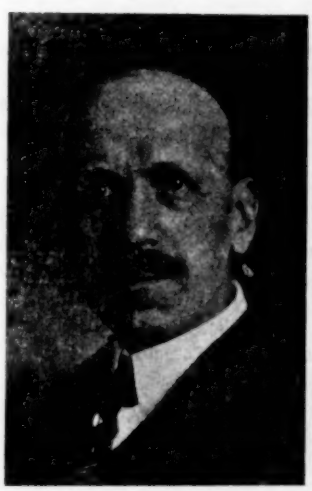
Committee on Federal Narcotic Regulations.

C. H. LaWall, *Chairman*, Philadelphia, Pa.
C. W. Johnson, Seattle, Wash.
A. W. Linton, Seattle, Wash.
C. Osseward, Seattle, Wash.
Clair A. Dye, Columbus, Ohio

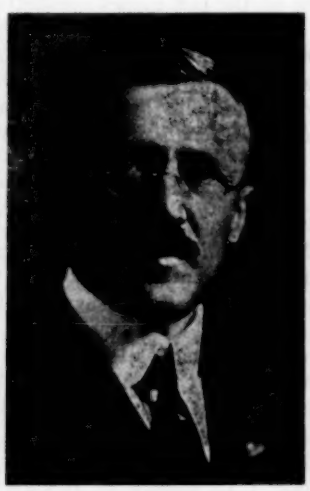
Special Committee on Referendum.

H. V. Arny, New York, N. Y.
C. H. LaWall, Philadelphia, Pa.
J. H. Beal, Urbana, Ill.

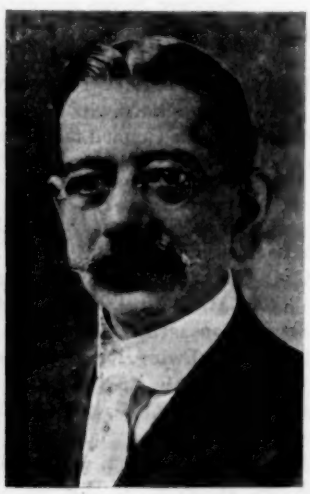
A. G. DuMez, *Secretary.*



HENRY KRAEMER
Ann Arbor, Mich.



CHARLES W. JOHNSON
Seattle, Wash.



SAMUEL L. HILTON
Washington, D. C.

THE THREE PRESIDENTIAL NOMINEES OF AMERICAN PHARMACEUTICAL ASSOCIATION FOR 1921–1922

SIXTY-EIGHTH ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, CITY OF WASHINGTON, MAY 6–10, 1920.

ABSTRACT OF THE MINUTES OF THE FIRST GENERAL SESSION.

All sessions of the Sixty-eighth Annual Meeting of the American Pharmaceutical Association were held in the New Willard Hotel, Washington, D. C. The First General Session was convened by President L. E. Sayre, Thursday, May 6, at 3 P.M. (The list of those in attendance is printed in the June issue of the JOURNAL A. PH. A.)

Vice-President Theodore J. Bradley presided while President Sayre read his annual address. (See pp. 469–482, June issue, JOURNAL A. PH. A.) The address was referred to a committee consisting of C. W. Johnson, Chairman, C. H. LaWall, H. M. Faser, W. F. Rudd and M. Noll. (For convenient reference the report of the Committee on President's Address in abstract follows.) It was approved.

Report of the Committee on President's Address.

1. That the Secretary of the American Pharmaceutical Association suggest to the Secretaries of the several unincorporated State Pharmaceutical Associations that they take immediate steps to incorporate under their State laws, so that they may have official representation in the 1930 Pharmacopoeial Convention.

2. That the Pharmacopoeia should not be limited to those drugs the potency of which has been definitely proven by laboratory or clinical methods.

3. That the Association should express its attitude by resolution concerning the best method to be employed in the revision of the Pharmacopoeia.

4. That the American Pharmaceutical Association should take steps providing that the pharmacist who dispenses alcoholic liquors as medicines and according to law is not classified as a retail liquor dealer.

5. That drug plant cultivation is of importance to our country, and the American Pharmaceutical Association should lend its influence and assist State and National institutions in their efforts to secure appropriations for this important work.

6. That the President be empowered to appoint at once a committee of three to act with similar committees already appointed from the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy, to the end that the joint committee may function properly and complete its plans before leaving Washington.

President Sayre appointed on the last named committee: Edward Spease, E. F. Kelly and R. A. Lyman.

Secretary J. W. England read the minutes of the Council. (See pp. 628 *et seq.*, June issue, JOURNAL A. PH. A.) They were approved.

Hugo Kantrowitz read several appeals for aid from Austrian pharmacists. They were referred to the Council for action. (See June issue, JOURNAL A. PH. A., following Council Business.)

Nominating Committee.

The following Nominating Committee was named: Carl Whorton, Alabama; Frank Schachleiter, Arkansas; A. R. Maas, California; F. E. Mortensen, F. W. Nitardy, Colorado; C. C. Cannon, W. S. Richardson, Connecticut; A. M. Roehrig, Georgia; G. D. Beal, W. B. Day, Illinois; H. S. Noel, C. B. Jordan, Indiana; E. O. Kagy, W. J. Teeters, Iowa; M. Noll, L. E. Sayre, Kansas; L. A. Brown, J. W. Gayle, Kentucky; John F. Hancock, Louis Schultz, Maryland; C. O. Ewing, Irving P. Gammon, Massachusetts; H. C. Hamilton, W. L. Scoville, Michigan; John Nelson, E. L. Newcomb, Minnesota; C. E. Anding, H. M. Faser, Mississippi; H. V. Farr, L. G. Blakeslee, Missouri; C. E. Mollet, Montana; Niels Mikkelsen, H. C. Newton, Nebraska; W. D. Grace, New Hampshire; G. M. Andrews, J. Hostmann, New Jersey; H. B. Smith, W. L. Dubois, New York; E. V. Howell, E. V. Zoeller, North Carolina; Oscar Hallenberg, North Dakota; R. W. Terry, E. H. Thiesing, Ohio; J. C. Wallace, C. H. LaWall, Pennsylvania; W. H. Ziegler, J. B. Hyde, Jr., South Carolina; E. C. Bent, D. F. Jones, South Dakota; W. J. Cox, E. A. Ruddiman, Tennessee; C. A. Duncan, E. G. Eberle, Texas; John E. Culley, Utah; Morris Phipps, W. F. Rudd, Virginia; Cornelius Osseward, A. W. Linton, Washington; W. E. Dittmeyer, West Virginia; O. J. S. Boberg, W. O. Richtmann, Wisconsin.

J. H. Beal, H. M. Whelpley, W. A. Frost, John G. Godding and H. H. Rusby were appointed by President Sayre as members-at-large.

The First General Session re-convened at 8 P.M. to listen to the address of Dr. C. E. McClung, of the Medical Division of the National Research Council, and Prof. John Uri Lloyd. The former spoke of the aims and operation of the Council, and the latter speaker dwelt on the importance of research and the work for which the National Research Council was established. The addresses will be printed.

A vote of thanks was tendered the speakers, and the First General Session of the Association was then adjourned.

Minutes of the Second General Session.

The Second General Session of the American Pharmaceutical Association was convened by President Sayre, May 7, at 8.30 P.M.

The minutes of the First General Session were read and approved.

The report of the Committee on Constitution and By-Laws was presented by Chairman J. H. Beal.

The report was accepted and action thereon deferred to a subsequent session, May 10.

Report of the Nominating Committee.

Secretary A. M. Roehrig presented the report of the Nominating Committee, which was approved. The nominees to be voted on by mail are as follows:

For President, Henry Kraemer, Michigan; C. W. Johnson, Washington State; S. L. Hilton, District of Columbia.

For First Vice-President, Frank Schachleiter, Arkansas; Charles Caspari, Missouri; Wilber J. Teeters, Iowa.

For Second Vice-President, C. E. Anding, Mississippi; D. F. Jones, South Dakota; W. J. Cox, Tennessee.

For Third Vice-President, Hugo Schaefer, New York; W. H. Zeigler, South Carolina; R. W. Terry, Ohio.

For Members of the Council, Henry M. Whelpley, Missouri; George M. Beringer, New Jersey; J. G. Godding, Massachusetts; C. B. Jordan, Indiana; Edward Spease, Ohio; C. H. Packard, Massachusetts; Willis G. Gregory, New York; C. E. Mollet, Montana. Three to be selected.

Secretary J. W. England read the minutes of the Council. (See Council Business, pp. 6 to 39 *et seq.*, June issue, JOURNAL A. PH. A.)

F. H. Freericks moved, seconded by George M. Beringer, that the minutes be received and approved, with the exception of the recommendations, these to be acted on seriatim. Carried.

F. H. Freericks moved, seconded by George M. Beringer, that the recommendation relating to the discontinuance of the War Veterans Section be referred back to the Council. (See p. 640.) Mr. Freericks in speaking on the motion outlined the purpose of the Section, that it was organized for the benefit of pharmacists who had served in the war; he stated that 2,100 of probably 10,000 had become affiliated; that their interest was exhibited by their applications for membership; that their non-attendance was due to not being advised of the meeting. He spoke of the possibilities for the Association and contended that the matter of discontinuing the Section should be taken under further consideration.

Local Secretary Hilton stated that the failure to send notices to members of the War Veterans Section was due to oversight, the fact that most of the applications for membership were received shortly before the convention, and the rush of work, due to the earlier date of the meeting.

Clyde L. Eddy was convinced that a Section would not be sufficiently well attended to warrant the work necessary for preparing interesting programs; that those most interested had the same objects as other members, which would be interfered with by Sectional meetings; that the work for which the Section was organized had been accomplished, and that now a committee in which all branches of the drug industry would be represented could more effectively handle the work. He said the War Veterans Section had voluntarily disbanded.

Robert P. Fischelis spoke along the same lines as the preceding speaker. He said that to hold the members, who had become affiliated, they should have received the publications of the

Association; if they had voluntarily made application, then here would be a greater likelihood of their continuance in the Association; that notices of the convention had been sent out by the Section but, probably, only few had reached their destination before the meetings. He agreed that a committee could take care of the work.

The vote on the question was called for, and the motion to refer it back to the Council was lost. (See also pp. 644–649.)

The recommendation of the Council referendum on the Year Book was carried; also the recommendation concerning the exportation of narcotics to be referred to a special committee, to be appointed by the Chairman of the Council (see p. 640), was approved.

Mr. Freericks moved the adoption of the report of the Council, seconded by George M. Beringer. Carried.

The report of the Treasurer was presented in abstract. (Complete report to be printed in the Year Book, and an abstract in the JOURNAL.) Accepted.

The report of the General Secretary was read and adopted. (See Committee Reports.)

F. H. Freericks moved a vote of thanks to the Treasurer and Secretary. Carried.

Chairman John C. Wallace made a verbal report for the Committee on National Legislation. He explained that there were no specific instructions by which this Committee could act and be guided; that there were no provisions for expenses incurred; that there were occasions when prompt action was necessary, and to ask for specific instructions delayed matters of immediate importance.

The question was discussed by Messrs. C. A. Mayo, S. L. Hilton, Charles H. LaWall. It was finally voted to refer the matter to the Council, asking that instructions be formulated for the Committee and means provided for defraying expenses that may be necessary in carrying out the duties assigned to this Committee.

Chairman F. E. Stewart presented the report of the Committee on Patents and Trademarks. It was accepted. (To be printed.)

Chairman Theodore J. Bradley presented the report of the Committee on Time and Place. He stated that the Committee had given consideration to various cities for the next annual meeting, and had unanimously decided on New Orleans.

Secretary George McDuff, of the Louisiana Pharmaceutical Association, extended the invitation for New Orleans. The report of the Committee was adopted and New Orleans selected for the next place of meeting in September, 1921, the date to be fixed by the Council.

The report of the Committee on President's Address was presented and the recommendations considered seriatim. After some discussion the report was approved. Vice-President Theodore J. Bradley presided during the consideration of the report. (See report of First General Session.)

Owing to the absence of Chairman E. Fullerton Cook, C. A. Mayo presented the report of the Committee on the Status of Pharmacists in the Government Service. It was accepted. (To be printed.)

Chairman C. H. LaWall presented the report of the Committee on Nomination Methods. It was accepted and referred to the Committee on Constitution and By-Laws. (Printed for consideration by the members, p. 317, March issue, JOURNAL A. PH. A.)

Chairman Theodore J. Bradley reported for the Pharmaceutical Syllabus Committee and requested that the usual annual appropriation of $25.00 be made. The report was accepted and the matter of expenditure referred to the Council with a favorable recommendation. (See also p. 643.)

The report of Chairman John F. Hancock, of the William Procter, Jr. Memorial Fund, was read and accepted. It follows:

"The Chairman of the William Procter Jr. Memorial Fund would respectfully report that the Committee has not made any progress since the meeting in New York last year, nor does it calculate being able to make more progress until National conditions produced by the World War become more settled. Propaganda and schemes are so numerous at present that we feel it would be inopportune at this time to solicit contributions, and another fact to be considered is the increased cost of material and labor to erect the monument.

"Your Committee will not lose sight, or neglect, at the proper time, the importance of an earnest effort to complete the work in hand, and we feel assured of a monument to the Father of

American Pharmacy of a character that will be a credit to pharmacy and a pleasure and pride to the American Pharmaceutical Association.

"Respectfully submitted,

(Signed) "J. F. HANCOCK, *Chairman*."

Chairman F. H. Freericks made a verbal report for the Committee on Model Pharmacy Law; he reported progress and requested that the Committee be allowed to bring in a final report at the next annual meeting. He stated that the Committee would hold a meeting during the interim. Caswell A. Mayo moved the acceptance of the report and that the Committee be continued. Carried.

Charles H. LaWall reported verbally for the Committee on the Darrow Hospital Bill. He stated that the measure was being looked after and progress had been made.

R. P. Fischelis reported for the Coöperative Publicity Committee and requested that an appropriation of $150.00 be made for the work of the Committee. The report was accepted and referred to the Council. (See p. 392 and p. 645.)

George M. Beringer reported for the delegates to the American Drug Manufacturers' Association. He spoke of the value of the work of their Committee on Standards to pharmacy, and commended the favorable coöperation that had been given.

The Second General Session was then adjourned until May 8, 9.30 A.M., to welcome Surgeon General Braisted of the U. S. Navy, who is also President of the American Medical Association.

President Sayre convened the American Pharmaceutical Association Saturday morning, May 8, at 9.30 A.M. He stated that the special session had been convened to meet Surgeon General Braisted of the U. S. Navy, who prior to leaving the city on official duties had kindly consented to speak briefly to the members of the Association.

Local Secretary S. L. Hilton introduced the Surgeon General and President of the American Medical Association, who spoke in part as follows:

"I have been interested in your Association in many ways, your efforts for standardization and uplifting of the pharmaceutical profession.

"We have succeeded through the efforts made by the American Medical Association and the profession at large in reaching almost a uniform standard for the practice of medicine. It is an accomplishment that has taken a great deal of effort and a great many years to bring about. So I have viewed with the greatest interest the efforts of this Association which is closely allied to us.

"You will be interested to know that during the war no class of men stood higher in their efforts to do war work than the hospital corps and particularly the pharmaceutical branch or division of that corps. And a thing that has delighted and comforted me more than anything else has been the high appreciation of the numerous citations for efficiency and valorous conduct that has characterized these men. No group of men in the service generally, I think, has received higher recognition than the hospital corps, including pharmacists. The pharmacists, particularly, have been intrusted with an important work which the war has demanded of them. They have done it well.

"During the war the finest type of professional men were gathered from schools and colleges and business associations of all kinds and taken into the Navy and trained to become members of this corps. This gathering has given us probably the finest hospital corps or pharmaceutical corps in the world. We have been endeavoring for many years to develop the hospital corps, as we call it; to broaden the field of their work and give them an opportunity to occupy a position that would be commensurate with the knowledge and effort we demand of them.

"The name pharmacist in the Navy is not broad enough to give you an idea of what we require of him. We expect that he shall be an expert pharmacist of the highest type. He must be an expert chemist. We have developed for him many other important duties which extend far and away beyond the lines of a dispenser of medicines. So that when you think of a pharmacist in the Navy you may think of a man with pretty broad qualifications—one that it has taken years and years of practical work and instruction to develop into the high type of man that is required for use in the Service. As I say, the finest type there is in any military service of the world.

"I hope that we will be able to show the proper recognition to this splendid corps for their work, during the war particularly. * I know you are anxious that these older men in the Service who rendered splendid service during the war shall receive at least the same consideration that is given other officers of similar type in the Navy. Just how much can be done this year depends upon Congress. What the members will do it is impossible to say. We are concerned in endeavoring to make every effort to see that the pharmacists have proper recognition—at least recognition equal to that of other officers with whom they have equal rank.

"I am a great believer in the quality of a profession; in my opinion, we are all members of one family, whatever our profession may be. And I believe all children should be treated alike. I think every profession, whether it be law, medicine, pharmacy, chemistry or any other, should be looked upon with equal recognition and accorded equal rights. So I feel towards this Association that we are brothers in a great work of life, particularly in medicine. And I feel you are with us in one of the most noble professions, and we should be on a parity.

"We have developed a school of pharmacy in the Navy which most of you know about and which has caused a great deal of interest and comment. It is rather an unusual school, where we educate pharmacists and give them also instruction which they must have as pharmacists in the Navy. Another interesting subject is the development of a botanical garden, in which a study is made of the different drug plants. This gives the men a splendid opportunity to see the different plants as they grow.

"I want to express my deep appreciation of your work and my interest in it and its success in every possible way. I hope you will always feel that you have in the hospital corps of the Navy splendid pharmacists who are worthy of your recognition and fellowship and men who are constantly striving to go higher and higher in this field of your special work. I thank you."

A rising vote of thanks was extended to Surgeon General Braisted. The session was then adjourned.

Final General Session.

The Final General Session of the Sixty-eighth Annual Meeting of the American Pharmaceutical Association was called to order by President L. E. Sayre, Monday, May 10, at 8.30 P.M.

The minutes of the Second General Session were read by the Secretary, and approved. The minutes of the Council, including also the minutes of the first meeting of the Council for 1920–1921, were read by Secretary J. W. England. On motion and vote they were approved. (For minutes of latter meeting see this issue of the JOURNAL, former on pp. 636–649, June number.)

Chairman F. E. Stewart presented the report of the Committee on Reorganization (to be printed). The report was accepted, and the Committee continued, with permission to enlarge the Committee by the addition of interested members, and approval of the Council.

A letter from the Philadelphia College of Pharmacy, signed by President Howard B. French and Dean Charles H. LaWall, was read: it conveyed an invitation to the American Pharmaceutical Association to send delegates on the occasion of the celebration of the Centenary of the College in 1921. On motion, duly seconded, it was voted that delegates be appointed by the incoming President to attend the celebration.

Secretary Jeannot Hostmann presented a report of the minutes of the House of Delegates. It was approved. (To be printed.)

George M. Beringer, reporting verbally for the Committee on International Pharmaceutical Nomenclature, stated that on account of the war its work had been discontinued, but some of the members were of the opinion that it would again be taken up during next year.

Caswell A. Mayo reported verbally for the Committee on Health Insurance, owing to the absence of Chairman Harry B. Mason. It was in line with previous actions of the Association thereon, and approved.

Chairman J. H. Beal read the report of the Committee on Constitution and By-Laws. The amendments were considered seriatim.

The report of the Committee on Nomination Methods was again read, as the suggestions were embodied in the report of the Committee on Constitution and By-Laws, amending Articles 1, 2, 3, and 4 of Chapter I of the By-Laws.

After considerable discussion by Messrs. Rudd, Beringer, Philip, Kebler, LaWall, Ewing, Anderson, Judisch and others, and explanatory remarks by Chairmen J. H. Beal and Charles H.

LaWall, the motion was voted on to adopt the amendments, and the motion was declared lost. There was little discussion on the other amendments, and all of them not conflicting with the former were adopted; whereupon the motion to adopt the report as amended was voted on, and carried. For convenient reference the report, as amended, follows:

REPORT OF THE COMMITTEE ON REVISION OF THE CONSTITUTION AND BY-LAWS.

Most of the amendments reported by the Committee are of minor character, designed either to bring the Constitution and By-Laws into harmony with the present usages of the Association or to remove or harmonize inconsistencies.

The one exception to this rule is in the amendments proposed to Chapter I of the By-Laws relating to the election of officers, in which a method of nomination and election is reported for action in case of the adoption of the report of the special committee on nominations.

AMENDMENTS PROPOSED TO THE CONSTITUTION.

Only three amendments to the Constitution are offered, all designed to make its provisions correspond to the well settled practice of the association.

Amend Article III of the Constitution by inserting after the word "also" in the last line but one, the words "an Honorary President and."

The effect of this change will be to make the Honorary Presidency a constitutional office, and with an additional change in the By-Laws make the incumbent a member of the Council.

After the word "Council" in the last line insert: "Past Presidents and past Honorary Presidents shall not be eligible to re-election."

This amendment will be necessary, *if the method of nominating officers proposed in the amendments to the By-Laws is adopted.* Not adopted.

Change the last sentence in Article III to read: "They shall hold office until their successors are elected and qualified or have been installed."

As the sentence now reads the officers cease to be officers as soon as an election has been held and the vote has been announced.

As the Constitution cannot be amended without publication of the proposed amendments in the JOURNAL at least thirty days prior to the annual meeting, it will be necessary for the above recommended amendments to lie over until next year.

AMENDMENTS PROPOSED TO THE BY-LAWS.

CHAPTER II.

Of the President and Vice-Presidents.

Articles I, II, III, IV, V, VI and VII: No change.

Amend Article VIII of Chapter II of the By-Laws by deleting the first sentence. This amendment is dependent upon the desire of the association to abolish membership certificates as hereinafter proposed. Adopted.

Amend Article IX by inserting before the word "questions" in the second line the words "or other." Adopted.

The effect of this amendment will be to relieve the president from the necessity of discussing only scientific facts or questions as this Article now requires.

CHAPTER III.

Of the General Secretary.

Articles I and II: No change.

Article III: In the third line strike out the words "President, Local Secretary" and insert in lieu thereof the words "all officers of the association," change the word "chairman" to "chairmen" and change the word "every" to "all." In the fourth line, change the word "committee" to "committees" and the word "his" to "their." Adopted.

At the end of the present article add the language "and shall perform such other duties as are prescribed in the Constitution and By-Laws or which may be assigned to him by the Council or the Association." Adopted.

CHAPTER IV.

Of the Local Secretary.

No change.

CHAPTER V.

Of the Treasurer.

Articles I and II: No change.

Amend Article III by changing the words "three years" to "six months." Adopted.

This change is necessary to correspond with the By-Laws governing the suspension of members for non-payment of dues.

Articles IV and V: No change.

CHAPTER VI.

Of the Reporter on the Progress of Pharmacy.

Articles I and II No change.

Article III: At the end of the present Article III add: "He shall also prepare an index or brief extract of current pharmaceutical and chemical literature for publication in the JOURNAL of the Association." Adopted.

Articles IV and V: No change.

CHAPTER VII.

Of the Council.

Article I: Delete the words "Section 1 and Section 2," as unnecessary and in the interest of uniformity. Adopted.

Article II: No change.

Article III: After the word "President" add the words, "Honorary President." This amendment will make the Honorary President an *ex-officio* member of the Council. Adopted.

Articles IV, V, VI and VII: No change.

Article VIII: Delete the words "Section 1" and "Section 2," a unnecessary, and in the interest of uniformity. Adopted.

Articles IX and X: No change.

CHAPTER VIII.

Of Membership.

Article I: In line three strike out the words "and those;" in line four strike out the word "also;" in line five, after the word "journals," insert the language "and other persons interested in the progress of the science and art of pharmacy." Adopted.

This change will make the by-law correspond to present practice. At present we have many valuable members who do not come within any of the categories at present named in the by-law.

Article II: At the end of the first paragraph add the following: "except to those who have resigned or have been dropped from the roll for non-payment of dues prior to the issuance of any such publication." Adopted.

This change is in the interest of economy, and conforms to the practice of associations generally, which usually discontinue the sending of publications to those who have been dropped from membership.

Articles III and IV: No change.

Article V: Delete as unnecessary. Delegates from state associations are now provided for in the House of Delegates. Adopted.

Article VI: Delete. Adopted.

The obtaining of certificates of membership by those who remain members for one year and then drop out has grown to be a grave abuse and should be ended.

Articles V, VIII and IX: Change the numbers of these articles to V, VI and VII.

CHAPTER IX.

Of Meetings and Sections.

Articles I, II and III: No change.

Article IV: After the word "Council" first appearing in line four, insert the words: "in full or in abstract." This will authorize the reading of Council Minutes in abstract if the Association so desires. Adopted.

Articles V, VI, VII, VIII, IX, X, and XI: No change.

Article XII: Delete the word "section" wherever it occurs, leaving the numerals stand unchanged. The word as here used is unnecessary, and is confusing as being employed in a different sense than in the remaining articles of this chapter. Adopted.

Article XIII: Delete the word "section" wherever it appears at the beginning of a paragraph. Adopted.

Articles XIV and XV: No change.

Following Article XV insert Article II of Chapter X, and give it the number XVI. The article in question relates exclusively to the reading of papers before the sections, while all the other Articles of Chapter X relate to committees. Adopted.

Article XVII: No change.

CHAPTER X.

Of Committees.

Article I: No change.

Article II: Transfer to Chapter IX as previously proposed, and renumber the remaining articles of Chapter X accordingly.

Articles III, IV, V, VI, VII, VIII, IX and X: No change except in numbering.

CHAPTER XI.

The House of Delegates.

No change.

CHAPTER XII.

Rules of Order and Debate.

No change.

CHAPTER XIII.

Local Branches.

Articles I, II and III: No change.

Article IV: At the end of the last line strike out the words "for that time," and in lieu thereof insert the words, "subject to the provisions of Article V." Adopted.

Add a new article, to read as follows:

"Article V. If within any one calendar year any local Branch shall fail to hold at least three stated meetings the proceedings of which are reported for publication in the JOURNAL, the Branch shall be deemed to be suspended, and the membership of the representative of such Branch on the Council shall terminate." Adopted.

This addition to the By-Laws is presented for the reason that it has been asserted that certain local Branches exercise an altogether perfunctory existence, and hold meetings only when it is necessary to elect a Council representative. These statements are probably incorrect, but a local Branch should certainly be able to report at least three stated meetings within the year, if it desires to retain its existence and a representative on the Council.

CHAPTER XIV.

Miscellaneous.

Change the chapter heading from "Miscellaneous" to "Amendments."

The Committee does not report any amendments to the By-Laws of the Council, Scientific Section, or House of Delegates, or to the General Rules or Rules of Finance, as not coming within the scope of its duties. Adopted.

The Committee has not had time to devote proper consideration to the revision of the existing official Code of Ethics, and recommends that the members of the Association study the provisions of this code carefully and notify the incoming Committee on Constitution and By-Laws of such changes as are deemed necessary.

Committee { J. H. BEAL, *Chairman*, J. W. ENGLAND, H. M. WHELPLEY, G. M. BERINGER, HARRY B. MASON.

E. L. Newcomb moved a vote of thanks to the Committee on Revision of Constitution and By-Laws and the Committee on Revision of Nomination Methods. Carried.

United States Commissioner of Education in Virgin Islands, H. C. Blair, member of the Association, was introduced, and he briefly addressed the convention.

Chairman Lyman F. Kebler presented the report of the Committee on U. S. Pharmacopoeia. It follows:

"The Chairman of the Committee of Revision has succeeded in extracting most of the suggestions, ideas and criticisms from your committee members. We desire, however, to call attention to several features. The Ninth Decennial Revised Pharmacopoeia provides many satisfactory standards, tests, methods of analysis, tables, limits, etc. Some have been tried out in court, and others at the Ports of Entry. Importers and foreign dealers are conversant with them. Unless something is to be gained by changes, they should not be disturbed. Changes in standards, methods, etc., not only disturb the trade but add to the labor of the analysts.

"In view of the high cost of alcohol and the restrictions thrown about this important solvent by existing regulations, and the fact that approximately one third of all medication is marketed in the form of tablets, and the further fact that this form of giving medicines is very satisfactory, it is believed that the Committee of Revision should give this form of medication very careful consideration, with a view of providing standard methods of manufacture. It is believed that tablets should receive at least the same recognition as do pills."

The following resolution by M. Noll was adopted:

Resolved, That this Association in General Session assembled go on record as approving the most active relations with the various departments of the United States Government equipped for coöperation in the work of the forthcoming revision of the U. S. Pharmacopoeia.

Chairman Jeannot Hostmann presented a verbal report for the Committee on Weights and Measures, stating that he had attended the meetings of the American Me ric Association in New York City and St. Louis; that he had corresponded with the World Trade Club, engaged in popularizing the metric system. He recommended the continuation of membership of his Association in the American Metric Association. Carried.

Chairman Jacob Diner presented the report of the Committee on Closer Affiliation of Pharmacists and Physicians. (To be printed.)

Chairman Heber W. Youngken reported progress for the Committee on Horticultural Nomenclature.

Chairman Paul S. Pittenger presented the report of the Committee on Physiological Assaying. (See under Commi tee Reports, June issue, JOURNAL A. PH. A.)

Caswell A. Mayo made a supplementary report on the Darrow Hospital Bill, stating that Secretary Daniels of the U. S. Navy had addressed a letter to the Committee on Naval Affairs, requesting them to pass the Darrow Bill, which gives commissioned rank to pharmaceutical officers in the Corps.

PRESENTATION OF THE EBERT PRIZE.

It has been decided to make the presentation of the Ebert Prize a formal part of the program. The prize this year was awarded to Dr. George D. Beal for his paper on "A 'Shaking Out' Method for the Quantitative Estimation of Alkaloids." (See January issue, JOURNAL A. PH. A., pp. 9–15.) Caswell A. Mayo made the presentation. He spoke of the founder and the purpose of the prize, and referred to those heretofore honored. Owing to the absence of the recipient, his father, Dr. J. H. Beal, responded for him in accepting the honor, and gratefully acknowledged his appreciation of the gift, which in this instance had an additional value for him.

Lyman F. Kebler reported that the Committee of this Association, working with others to have salaries of chemists and others in the Government service increased, had met with some degree of success. There has been a re-classification of commissions granted. While the raise had not been up to expectancy, an advance of about fifty percent was made.

It was moved by Bruce Philip, seconded by F. W. Nitardy, that the Nominating Committee of next year meet later during convention week than has heretofore been the rule. Carried.

W. C. Anderson moved, and this was seconded by all of the assembly, that a vote of thanks be extended to the Local Secretary and all the local committees and others who had contributed toward making this meeting enjoyable and a success. Carried.

President L. E. Sayre appointed Caswell A. Mayo to introduce the officers of the Association for installation, who performed this duty in his usual happy manner, and the President welcomed them. Brief responses were made by the officers. President C. H. Packard spoke at greater length, asking for coöperation. The retiring president thanked the members for the honor conferred upon him and the support given him during his term of office.

The Sixty-eighth Annual Convention of the American Pharmaceutical Association was then adjourned.

SCIENTIFIC SECTION, AMERICAN PHARMACEUTICAL ASSOCIATION.

ABSTRACT OF MINUTES OF THE SESSIONS HELD IN THE CITY OF WASHINGTON, MAY 7 AND 8, 1920.*

The first session of the Scientific Section, A. Ph. A., was convened by Chairman Jacob Diner, May 7, at 2.00 P.M. The reading of the minutes was dispensed with.

Dr. H. H. Rusby presided during the reading of the Chairman's address on:

PHARMACOPOEIAL REVISION FROM A DIFFERENT POINT OF VIEW.

By Jacob Diner.

Our scientific program amply provides for the discussion of such matters as generally come up for consideration at decennial sessions. I shall endeavor to bring before you another aspect of the revision problem, not new by any means yet, in my opinion, deserving of your earnest consideration.

At the Nashville meeting in 1913, F. E. Stewart read a paper entitled "Some Objections to Materia Medica Standardization, With Reference to the U. S. Pharmacopoeia," and he began his article by quoting from the *Journal of the American Medical Association*, November 30, 1909, page 1645, as follows: "A thoroughly up-to-date Pharmacopoeia—one which will truly reflect the best medical practice of the present time—will contribute more to save drug therapeutics than any other one thing." These sentiments of Dr. Stewart can be safely and wholeheartedly endorsed by every one truly interested in the progress of the healing art, be he physician, pharmacist, laboratory investigator, teacher, chemist or manufacturer. Similar sentiments are expressed by Bastedo (*J. A. M. A.*, Vol. 74, No. XII, 3/20/20), when he suggests with reference to U. S. P. revision, "That glandular drugs and their pure principles be introduced.....That newly introduced chemical substanees of proved worth be included." It is a crying shame that our Pharmacopoeia does not yet recognize solution of epinephrin (adrenalin) chloride, argyrol, acetylsalicylic acid, arsphenamin, etc. Scientific research will and must go on. New remedies and the investigation of some of the older and oldest remedies will proceed, irrespective of whether it is pharmacopoeial revision or not.

Physicians will justly insist that they cannot be expected to wait for the adoption and use of newly discovered remedial agents until the revisional committee has put its stamp of approval upon them, a fruition which has to wait the expiration of patent rights and many other restricting and inhibiting influences.

To ameliorate this undesirable and to some extent unbearable condition, the American Medical Association established the Council on Pharmacy and Chemistry and has endeavored to bring within reach of the medical profession those "New and Non-official Remedies" which comply with certain rules and regulations laid down by the council.

This, no doubt, was a step in the right direction, but it by no means solved the problem for the reason that the scope of the A. M. A. council is limited to censoring extravagant or unjustified claims as regards composition, active principles (kind and quantity) and to the mode of advertising substances or remedial agents seeking admission to "New and Non-official Remedies."

That physicians and pharmacists are interested in these phases of new remedies cannot be gainsaid. But they are still more interested in the new remedies and preparations from the point of view of their efficiency as therapeutic agents. An attempt to accomplish this was made in 1905 by establishing the "American Pharmacologic Society." This society proposed to judge additions to materia medica in the following manner:

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* Papers with discussions will, hereafter, be printed apart from the minutes. It is understood, unless otherwise stated, that the papers were referred to the Publication Committee.

First: By fixing tests for determining the identity, purity and strength of the product, thus securing uniformity in therapeutic effect.

Second By sending the product to one or more physiologic laboratories to ascertain its action on animals.

Third: By sending it to at least two clinicians for clinical tests.

Fourth: By compiling the results of these tests in a "working bulletin" and sending the same to the members of the society and others for comment, whether favorable or otherwise.

The only real objection made against the working of that society was that the manufacturers submitting preparations for criticism were expected to pay for such investigation and that they would use the endorsement of the society for advertising purposes.

I shall not at this time enter into any discussion as to the validity of this objection. The constitution and by-laws of the proposed society contained safeguards against exploitation of that kind, which, in the estimation of many competent physicians who endorsed the plan, were ample. Moreover, the plan of organization included representation from various medical and pharmaceutical societies, and also from manufacturing houses engaged in the pharmacal and pharma-chemical industries. Probably no plan of censorship could be devised fairer in every way than this. Competing manufacturing houses represented in the board would be quick to prevent, if possible, the circulation of false claims in relation to competing articles. Furthermore, I do not believe that a large body of scientific investigators could be bought by any manufacturer or group of manufacturers for any amount of money. But in order to bring up this matter once more for discussion, I will concede that some slight suspicion may attach itself to a society or group of men who would undertake such work and would accept remuneration from the one most interested in the favorable action, the manufacturer, particularly if such a society or committee was a strictly private affair, in which membership was regulated, awarded or refused by a private board, acting under its own constitution and by-laws and where "stuffing" of committees or political wire-pulling could possibly become an important factor.

On the other hand, the "laborer is worthy of his hire," and no onus should or could attach to the man who receives financial remnueration for scientific work honestly done and whose results and subsequent reports would not and could not be biased by influences of a selfish or financial nature.

Admitting then that a careful investigation of the merits of new remedies is a consummation much to be desired, and realizing the importance of placing useful new remedies at the disposal of the physician at the earliest possible opportunity, there remains but the elaboration of a system which will accomplish this without the possible taint of commercialism. Much as the Pharmacopoeial Revision Committee has been criticised, such criticism, being for errors of omission rather than of commission, no scandal of commercialism has attached or could ever attach to this committee, considering the manner in which it is constituted. Representing, as it does, delegates from medical and pharmacy schools, incorporated county, state and national societies, with the check-valves of the government, it is hard to conceive how such a committee could serve other than the best interests of the public and the professions. I, therefore, propose for your consideration the extension of the activities of the U. S. Pharmacopoeial Revision Committee, so that this committee may take up the investigation of newer remedies in the manner outlined above to the end that constant progress in medical research may promptly become available for the relief of suffering humanity.

The Chairman's address was referred to a committee consisting of F. E. Stewart, Joseph L. Mayer and Heber W. Youngken.

The above-named committee reported at the final session of the Section, but for convenient reference the report is placed here.

REPORT OF COMMITTEE ON CHAIRMAN'S ADDRESS.

Your committee reports that *whereas* the Chairman's address refers to a plan, first suggested to the A. M. A. in 1881 and subsequently presented to the U. S. Congress in a memorial from the Association, and later taken up in some of its essential details by the A. Ph. A. by the appointment and work of a special committee on national legislation, and *whereas* this plan is being gradually developed by the work of the two associations, resulting in the organization of the Council on Pharmacy and Chemistry of the A. M. A., and, *whereas* the plan should be considered in relation

to the possible reorganization of the A. Ph. A., therefore your committee recommend that the Chairman's address and recommendations be referred to the Committee on Reorganization of the American Pharmaceutical Association.

(Signed) F. E. STEWART, *Chairman*,
HEBER W. YOUNGKEN,
JOSEPH L. MAYER.

It was moved and carried that the report be received and approved.

The following papers were presented:

"Biological Assay: Its Scope and Limitations," by H. C. Hamilton.

"The Prophylactic and Therapeutic Value of Vaccines," by G. W. McCoy.

"Vaccines and Immune Serums—Have They Come to Stay?" by F. E. Stewart.

"Suggestions for Improvements of the Assay Processes of the U. S. P.," by Frantz F. Berg.

"A Simplified Laboratory Method for the Determination of the Phenol Coefficient of Disinfectants," (see June issue, JOURNAL A. Ph. A.) by Albert Schneider.

"Revision of the Monographs of Official Chemicals," by H. V. Arny.

"New Tests for Some Purgative Drugs," by E. H. Grant.

"New Tests for Sparteine and Guaiac," by E. H. Grant.

It was moved and carried that the following resolution proposed by Dr. Anderson be received and referred to the House of Delegates for their action.

Resolved, That biological methods of assay now having proved their value be made obligatory in the next revision of the Pharmacopoeia.

Dr. Arno Viehoever brought up the question of securing representation on the National Research Council. After a thorough discussion of the matter, it was moved and carried that a committee of three be appointed to consider the matter and to report on the same as early as possible. The following committee was appointed: Arno Viehoever, Albert Schneider and Ambrose Hunsberger.

The Chair appointed the following as members of the Nominating Committee Albert Schneider, John Paul Snyder and H. C. Hamilton.

SECOND SESSION, MAY 8, 10 A.M.

The second session of the Scientific Section, A. Ph. A., was called to order by Joseph L. Mayer, who presided owing to the absence of Chairman Jacob Diner.

The following papers were read:

"Phytochemical Studies," by Edward Kremers, *et al.*

"Analysis of Mercurial Ointment," by Joseph L. Mayer.

"The Influence of Hydrochloric Acid in Extracting Cinchona," by Wilbur L. Scoville.

"The Function of Glycerin in Fluidextracts," by Wilbur L. Scoville.

"Solubility of Volatile Oils in Diluted Alcohol," by Horatio C. Wood, Jr.

"How Can the Monographs on Inorganic Chemicals in the U. S. P. be Improved?" by Charles H. LaWall.

"Laboratory Notes," by George E. Ewe.

"Disinfectant Solution (Special Application)," by Lucius E. Sayre.

THIRD SESSION, MAY 8, 8.30 P.M.

The third session of the Scientific Section was opened by Joseph L. Mayer and later Chairman Jacob Diner presided.

The following papers were read:

"Domestic and Imported Hellebore, *Veratrum viride* Ait., *californicum* D. and *album* L." by George L. Keenan and Joseph F. Clevenger.

"Relative Oil Content of Sage Leaves and Stems," by Arno Viehoever and Joseph F. Clevenger.

"Popular Names of Crude Drugs," by Arno Viehoever.

"Mustard and Mustard Substitutes," by Arno Viehoever.

"Plant Associations," by Heber W. Youngken.

"Proposed Changes in the Monographs of Some Vegetable Drugs of the U. S. P.," by E. N. Gathercoal.

"Pharmaceutical Problems Presented by the Dakin Products," by Frank B. Kirby.
"The Chemistry of the Volatile Oil of Milfoil," by Roland E. Kremers.
"Why Castile Soap Should be Dropped from the Pharmacopoeia," by E. V. Kyser.
"Proposed Vegetable Drug Deletions," by A. Richard Bliss, Jr.
"Botanical Codes of Nomenclature in the U. S. P.," by H. H. Rusby.
"Official Standards for Botanical Drugs," by C. W. Ballard.

REPORT OF COMMITTEE ON EBERT PRIZE.

The Committee on Ebert Prize, F. R. Eldred, *Chairman*, W. L. Scoville and W. F. Rudd, reported that the prize had been awarded to Dr. George D. Beal, of the University of Illinois, for work done on immiscible solvents in connection with their use in alkaloidal assaying. The Committee also recommended that an announcement of the award of the prize be made at the last general session of the Association in the future. It was voted to receive the report and adopt the recommendations.

The Committee on the Chairman's Address then reported. (See First Session of the Section.)

The Nominating Committee presented the names of the following as nominees of the Section for the ensuing year:

Chairman, A. G. DuMez, Washington, D. C.
First Vice-Chairman, Joseph L. Mayer, Brooklyn, N. Y.
Second Vice-Chairman, Frantz F. Berg, Brooklyn, N. Y.
Secretary, Heber W. Youngken, Philadelphia, Pa.

The nominees were elected and thereafter installed.

The meeting of the Scientific Section was then adjourned.

SECTION ON PRACTICAL PHARMACY AND DISPENSING, AMERICAN PHARMACEUTICAL ASSOCIATION.

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN THE CITY OF WASHINGTON, MAY 7 AND 10, 1920.*

The first session of the Section on Practical Pharmacy and Dispensing was called to order by Chairman Edsel A. Ruddiman, May 7, at 2.00 P.M.

F. W. Nitardy presided during the reading of the Chairman's address:

ADDRESS OF CHAIRMAN EDSEL A. RUDDIMAN.

Practical pharmacy and dispensing is the beneficiary of all other departments of pharmacy. Historical, scientific, educational, legislative, and commercial all contribute to its good and practical pharmacy embraces them all. The Chairman of this Section, therefore, has the privilege of considering any of these branches.

In this address nothing new is offered, but it is desired to add a little more weight if possible to some of the problems which are pressing for solution.

THE PHARMACOPOEIA.

It is but fitting that reference be made to the fact that we are celebrating the completion of one hundred years since the United States Pharmacopoeia first made its appearance. Although many changes and great improvements have been made since the first edition, the writers of that first pharmacopoeia are to be honored for their wisdom and sagacity.

Many of the papers presented to this Association this year deal with suggested improvements. May we hope that the Committee of Revision will act wisely, will not revise simply to make a change, will not make a change unless some defect is really remedied. The Pharmacopoeia at present is a book of which we are justly proud.

TREND OF PHARMACY.

Is the professional work of the pharmacist on the increase or decrease? This is a disputed question if prescriptions are considered. That professional work is on the decrease when making

* Papers and reports with discussions will, hereafter, be printed apart from the minutes. It is understood, unless otherwise stated, that the papers were referred to the Publication Committee.

preparations is considered is generally acknowledged. One of the most potent causes of this decrease is found in the last two pharmacopoeias. The revisers have seen fit to incorporate a large number of assay processes for drugs, chemicals and preparations. For financial reasons the retailer cannot now make many of the preparations which he formerly made because the added expense of assaying a small amount is as great as in assaying a large amount. The standardizing of preparations is throwing the making of them into the hands of the large manufacturer. That standards should be made and lived up to is undoubtedly right and it is to the credit of pharmacists that they demand that goods which they dispense shall be the best and shall be uniform in strength although by so doing they cut off a large proportion of their professional work.

Now what can the retailer adopt in the line of professional work to take the place of manufacturing? What can the colleges of pharmacy teach in place of this? These are questions which are not easily answered and ones for which I have not seen satisfactory answers given. It has been suggested that the pharmacist should be trained to make clinical examinations and X-ray photos for physicians. But there is not enough of such work to justify many stores in a town in putting in the necessary apparatus and in attempting this. We must look further for an answer and a solution should be earnestly sought by the best minds in pharmacy.

EDUCATION.

The education of pharmacists and would-be pharmacists is being widely discussed and there is still great opportunity for improvement. But it is the education of the public that I wish to stress. The public needs to be educated to the fact that the pharmacist must be a trained professional man; that on him rests responsibilities as great as, if not greater than, those resting on the physician. The physician may make an error in diagnosing or in prescribing and often kind Nature comes along and does her healing work regardless. But if the pharmacist makes an error it may result in the speedy death of the patient. This is no myth or idle talk as can be proved by the experience of chemists doing general analytical work.

The public should also be instructed about the laws which govern the practice of pharmacy. In some states, if the people realized how poorly they are being protected, there would be some changes made at the next meeting of the law makers.

PUBLICITY.

How can this education be brought about? Every retailer can help and much can be done through the daily newspapers and popular magazines. It has been urged that a central publicity committee be appointed whose duties among other things will be to prepare and disseminate information for the public regarding pharmacy. I understand such a committee has been appointed and that it tentatively styles itself the Drug Trade Board of Public Information. Such a committee would have in its hands a power to do an infinite good. Pharmacy has had enough of "just as good" or "retail liquor dealer" publicity. What is wanted now is publicity of the right kind. Let us get busy and place ourselves in the proper light before the public.

PREREQUISITE LAWS.

This same publicity committee can do much towards getting prerequisite laws. It should be organized as thoroughly as some of the campaign committees were for raising money during the war. Every state should have a prerequisite law and the time is not far distant when this will be a reality.

Even though the prescription work is but a small part of the work and income of the pharmacist, his responsibility is just as great. I have had brought to me for analysis several cases in which death or serious results have occurred on account of errors in filling prescriptions. An attempt was made to discover whether the men making the errors were college graduates or not and so far as could be determined none of them were.

Again it is a wrong to the young man himself, as well as to the public, to register him without a college training. To do this is to give him the idea that he is prepared for life's work when he is not and realization of this fact will come too late to be corrected.

SHORTER HOURS AND STRIKES.

Shorter hours and Sunday closing have been discussed so much for the last quarter of a century that there seems little left to be said. But until it is settled and settled rightly, it will

ever be a subject of controversy, and action is what is needed now. In my opinion the long day is the root of nearly all of the ills from which pharmacy is suffering and not until this evil is co rected will pharmacy assert itself and become what it should. The most potent cause for the disorganization, for the failure of the pharmacist to organize, is the effect produced by long days of close confinement. Cut the day down to eight or ten hours and life will take on a new interest. That the day can be shortened without injury to business has been proved repeatedly by those who have tried it. The shortening of the hours will also raise the status of the pharmacist in the mind of the public who now look on him as a general servant to do its bidding. As has been said by a member of this Association: "The public condemns and rightly so, the railroad that compels the engineers of the passenger coaches to work sixteen hours a day, and if the public knew of the long weary watches of the pharmacist, knew of the errors of omission and of commission, it would not ask for reform; it would demand it."

A new danger has arisen from failure to shorten the day. So far it has not been serious but unless it be recognized and remedied, no one can tell the depths to which it may plunge pharmacy. I refer to the organization of drug clerks for the enforcement of their demands for better conditions by adopting labor union methods. Fortunately the two or three strikes or attempted strikes have resulted in failure. But is not the history of labor unions similar to this, weak at first but through failure to have their rights corrected have become powerful? We are glad the strikes failed and also that there were but few registered men among those striking. Nevertheless this is the straw which shows which way the wind is blowing. It is the little fire which may become a conflagration. Let us recognize it, look it straight in the face and correct it before it gets beyond our control.

Unfortunately there are some men who can see nothing but money in working sixteen hours a day for seven days in the week. They lose sight of the fact that without health and happiness money is of but little value. They lose sight of the fact that they are taking a long chance on making a costly error if their minds are befogged by over work. On account of this class of men it is difficult for pharmacists to come to an agreement. Resort to the passage of laws may be necessary and in those states where such laws have been enacted the results seem to be satisfactory to the clerks at least. But proprietors and clerks should get together to inaugurate the law and not leave it to politicians. Though no law can be passed to prevent the proprietor from working as long as he wishes, he should be all the more impressed with the fact that rest and recreation are as essential for him as for his employee. War and want of fuel shortened the hours for a season and probably would have left beneficial results if the "Flu" had not come along and put shorter hours to flight.

To have drug clerks adopt and apply the methods of labor unions in resorting to strikes to get their demands would be unbearable. Would we be having the strikes in the industrial world to-day, or would the unions ever have become as strong and arrogant, if their demands had been met as they should have been? We must formulate some plan by which the drug clerk will have a working day similar to other clerks, some plan by which the near strike will not become a reality. We must make pharmacy so attractive that we will get into the ranks the very best of the young men.

On motion the address was accepted for publication.

Chairman W. L. Scoville presented the report of the National Formulary Committee. (To be printed, with discussions, under Committee Reports.)

The following papers were read:

"Some Criticisms of the Pharmacopoeia," by C. B. Jordan.
"Manufacturing by the Retailer," by F. W. Nitardy.
"Suppositories," by J. U. Lloyd. (See June issue, JOURNAL A. PH. A.)
"Surgical Dressings," by Elmer H. Hessler.
"Fluidextract of Ipecac" (see June issue JOURNAL A. PH. A.), by Frantz F. Berg.
"Tincture of Vanilla," by K. A. Bartlett.

The following nominations for officers of the ensuing year were made: For *Chairman*, Ivor Griffith, Philadelphia; *Secretary*, H. M. Faser, University, Miss. *Associates*, D. F. Jones, of Watertown, S. Dak., and Ernest R. Jones, of Detroit, Mich.

SECOND SESSION.

The second session of the Section on Practical Pharmacy and Dispensing, A. Ph. A., was called to order by Chairman E. A. Ruddiman, May 10, at 2.30 P. M. The reading of the minutes was dispensed with, and the reading of papers continued, as follows:

"Some Pharmaceutical Preparations," by H. M. Faser.

"Drug Clerks' Unions and Strikes," by John Culley.

"Eight Hour Working Day in Pharmacy," by Cornelius Osseward.

"Clinical Laboratory Work and Clinical Pathology," by H. J. Goeckel.

"Clinical and Pathological Laboratories," by H. J. Goeckel.

"A Certain Prescription," by L. E. Sayre.

"A Prescription Clinic," conducted by Ivor Griffith and A. Nichols.

"Experiences in the Manufacture and Standardization of Dakin's Solution," by A. J. Sells.

"A New Suppository Device (see June issue, JOURNAL A. PH. A.), by Caswell A. Mayo.

"Suggestions, Recommendations and Reasons for a Higher Standard for Creosote U. S. P.," by L. Wallis Gibbons.

"Suggestions to U. S. P. Revision Committee," by Wm. Gray.

The following papers were read by title and referred to the Publication Committee:

"Suggestions for the New Pharmacopoeia" (see June issue, JOURNAL A. PH. A), by J. Leon Lascoff.

"Autogenous Vaccines," by S. B. Higgins.

The authors of the Prescription Clinic were requested to continue this valuable symposium as a regular unit of each year's program.

The following were elected officers for the ensuing year: *Chairman*, Ivor Griffith, Philadelphia; *Secretary*, H. M. Faser, University, Miss. *Associates*, D. F. Jones, Watertown, S. Dak., and E. R. Jones, of Detroit, Mich.

The Section on Practical Pharmacy and Dispensing was then adjourned.

(Reports of the other Sections and House of Delegates will appear in the August issue.)

PRODUCTION OF CANDELILLA WAX IN MEXICO.

While some candelilla wax is produced in Texas, most of the supply comes from Monterey, Mexico. The plant is a weed of that section and there are several small factories in Monterey engaged in making the wax. A recent U. S. Government Consular Report states that the largest factory produces about 700 pounds daily. The method of extraction and purification is described as follows: After the shrub is pulled out of the earth it is placed in wooden tanks of water which is heated to the boiling point. At the moment of boiling a certain proportion of sulphuric acid is put in the tanks. As soon as the acid comes in contact with the wax it comes to the surface and is collected and put in receptacles until it congeals; it is then put in another tank where steam is used to dissolve the wax, adding sulphuric acid a second time. The wax is then in a refined state and is allowed to harden in certain moulds.

SOLUBLE LEAD IN THE GLAZE OF CASSEROLES.

In a recent issue of the *Experiment Station Record*, there is abstracted a report on certain experiments made by H. Masters, with several types of earthenware casseroles, of French make, glazed only on the inside; and which showed that, in some cases, a considerable amount of lead can be extracted from the glaze not only by the action of 4 percent acetic acid but (and this is important) also by the action of dilute solutions of organic acid; namely, 1 percent acetic, citric or malic acid. It is further stated that glazed earthenware casseroles should, before being used, be treated with dilute acetic acid, which is kept at boiling temperature for an hour or more in the dish.

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.

Committee on Publication: J. W. ENGLAND, *Chairman;* CASWELL A. MAYO, H. B. MASON, E. L. NEWCOMB, CLYDE L. EDDY, and the Editor-in-Chief of the JOURNAL, General Secretary, Treasurer and Reporter on the Progress of Pharmacy, *ex-officio.*

Collaborators: C. HERBERT PACKARD, President, A. Ph. A.; WILBER J. TEETERS, President, A. C. P. F., H. C. CHRISTENSEN, Secretary, N. A. B. P., E. FULLERTON COOK, Chairman, U. S. P. Revision Committee; CHARLES H. LAWALL, Chairman, Council A. Ph. A. The Chairmen of the Sections A. Ph. A.: A. G. DUMEZ, IVOR GRIFFITH, EDWARD SPEASE, CHARLES O. LEE, CURT P. WIMMER and E. F. KELLY.

TECHNICAL TABLETS.

BY WILBUR L. SCOVILLE.

During the war the Germans are said to have used a paste made from kaolin and mucilage of Irish moss as a base for suppositories.

Litmus paper is most sensitive when made from weak litmus or azolitmin solutions—0.1 percent of azolitmin being the best strength. Congo paper should be made from a 1 percent solution, also phenophthalein paper. For the detection of free acid an iodide-iodate paper is most sensitive and reliable, free iodine being liberated if acid is present.

A new radio-active substance, *protactinium*, has been discovered, which has great emissive power and is the parent substance of actinium. It promises to add materially to the luminous-dial industry.

Quinine is found in the urine six days after its administration, but it is all eliminated from the bowels within six hours. A French chemist, Robin, thinks that cancer is caused by an enzyme which hydrolyzes the protein of the tissues and this hydrolyzed portion then stimulates the surrounding cells to an "anarchistic growth."

The sting of bees is a proteid compound, and not an acid, as has been supposed. The compound is allied to scorpion venom.

Italy has been long afflicted with a weed called asphodel and known as the "plague of the Mediterranean," and which is now being developed as a source of alcohol. An acre of the weed will yield 107 gallons of alcohol, and the residue can be used for cattle food or the manufacture of paper.

ALCOHOL AS A MOTIVE POWER.

In London alcohol mixed with benzol is now used in the combustion engines for driving motor cars. New fuel must be provided and alcohol may solve the problem; its sources are inexhaustible, for it will be available as long as there is vegetation, and things now going to rot may be utilized in its manufacture. This proclaims the importance of chemists to the world, in traffic as well as commerce.

GENERAL PRINCIPLES TO BE FOLLOWED IN REVISING THE PHARMACOPOEIA.

1. OBJECT AND SCOPE OF THE PHARMACOPOEIA.

The object of the Pharmacopoeia is to provide standards for the drugs and medicines of therapeutic usefulness or pharmaceutic necessity sufficiently used in medical practice throughout the United States and its possessions; to lay down tests for the identity, quality and purity of these; to insure, so far as possible, uniformity in physical properties and active constituents.

It is recommended that the Committee of Revision be authorized to admit into the Pharmacopoeia a carefully selected list of medicinal substances of known origin, but no substances or combination of substances shall be introduced if the composition or mode of manufacture thereof be kept secret. A statement shall be placed in the preface to the effect that standards for purity and strength, described in the text of the Pharmacopoeia, are intended solely to apply to substances which are used for medicinal purposes or determining the identity and purity of the same.

2. DOSES.

It is recommended that after each Pharmacopoeial article (drug chemical or preparation) which is used, or likely to be used internally or hypodermically, the Committee of Revision be instructed to state the average approximate (but neither a minimum nor a maximum) dose for adults, and, where deemed advisable, also for children. The metric

system to be used, and the approximate equivalent in apothecary weights or measures inserted in parenthesis. It is to be distinctly understood that neither this Convention nor the Committee of Revision created by it intends to have these doses regarded as obligatory on the physician or as forbidding him to exceed the doses given, whenever in his judgment this may seem advisable; the Committee of Revision shall make a distinct declaration to this effect in some prominent place in the new Pharmacopoeia.

3. NOMENCLATURE.

It is recommended that changes in the titles of articles at present official be made only for the purpose of insuring greater accuracy, brevity, or safety in dispensing, and to eliminate therapeutically suggestive titles. That changes in botanical names be made only for well defined reasons, and such changes shall conform to the rules of the International Botanic Congresses.

In the case of newly admitted articles, it is recommended that such titles be chosen as are in harmony with general usage and convenient for prescribing; for synthetic chemicals, with lengthy or unwieldy names, the Committee of Revision shall be empowered to coin short euphonious titles, contracted, if possible, from the true chemical names, but in the case of chemicals of a definite composition the scientific name shall be given, at least as a synonym.

There shall also be inserted, after each article used by physicians in prescriptions, an abbreviated name, which may be known as an official abbreviation, in order that uniformity may be established throughout the country, with the object of preventing mistakes in reading and compounding prescriptions, and further, to serve as authorized abbreviations in labeling the store furniture of the pharmacist.

4. SYNONYMS.

It is recommended that the use of synonyms should be extended in the next revision, and the synonyms printed in the text of the Pharmacopoeia, immediately after the official English name of the substance. When an article is known in commerce under more than one commonly used English name, such vernacular titles may be given as synonyms. A statement shall be made in the Preface of the Pharmacopoeia that substances labeled with an official synonym must comply with the same standards, tests and requirements as are demanded for the article under the official title.

5. PURITY AND STRENGTH OF PHARMACOPOEIAL ARTICLES.

It is recommended that the Committee of Revision be instructed to carefully revise the limits of purity and strength of the Pharmacopoeial chemicals and preparations, for which limiting tests are or may be given. While no concession should be made towards diminution of medicinal value, an allowance should be made for unavoidable, innocuous impurities or variations due to the particular source or mode of preparation, or to the keeping qualities of the several articles.

The "Purity Rubric," which limits the percentage of innocuous impurities, as introduced in the previous revision, should be continued, and tests and requirements should be appended to each article for which a "Purity Rubric" is given.

6. INTERNATIONAL STANDARDS.

The International Conference for the Unification of Formulas for Potent Remedies performed a signal service for all countries by recommending the various pharmacopoeias of the world to adopt certain standards for potent medicines. It is recommended that the Committee of Revision retain or adopt these standards wherever practicable, but it is believed that it would be unwise to require the acceptance of the details of pharmaceutical or other processes recommended by the International Conference.

If the finished product conforms to the International standards, we believe that each country should be left free to adopt such detail and manipulation as may seem to it best. Nothing should prevent, however, the adoption of the recommendations of the Conference, as to details, if in the opinion of the Committee of Revision the Pharmacopoeia can be improved by so doing.

The advances in science since the International Conference of Brussels in 1902 would indicate that International standards then adopted are not such as would be approved at this time as being in conformity with our present knowledge and ideals. It is recommended that, as soon as conditions will warrant, the Pharmacopoeial Convention take the initiative of calling another International Conference for the unification of standards and formulas for potent remedies.

7. GENERAL FORMULAS.

In view of the success attending the adoption of General Formulas in the U. S. P. IX for fluidextracts and tinctures, it is recommended that this principle be extended to the other official classes of preparations wherever practicable, and where preparations can be made by identical processes, that the General Formulas to be followed in each case shall be indicated in the text by reference.

8. APPENDING A LIST OF PREPARATIONS IN WHICH AN OFFICIAL ARTICLE IS USED.

It is recommended that, especially for the convenience of practicing physicians, there shall be appended after each article in the text a list of the official preparations in which it is an active essential ingredient.

9. ALCOHOLIC PERCENTAGE IN OFFICIAL PREPARATIONS.

It is recommended that a range of the content of absolute alcohol, by volume, be stated in the Pharmacopoeia, accompanying the text, for each preparation containing alcohol.

10. ASSAY PROCESSES.

It is recommended that the Committee of Revision be instructed to introduce Assay Processes for as many of the potent drugs and preparations made therefrom as may be found practicable and which lead to fairly uniform results when applied by different analysts; wherever feasible, tests of identity and purity are to be given for the products of such assays.

Where reliable methods of chemical assay are not possible, and concordant and dependable methods of pharmacodynamic testing are available, then the latter methods of standardization be adopted.

11. SERUMS AND OTHER BIOLOGIC PRODUCTS.

It is recommended that serums and other biologic products, of approved usefulness, if standardized by a department of the Federal Government, be admitted to the Pharmacopoeia.

12. WEIGHTS AND MEASURES.

It is recommended that the Committee of Revision be instructed to retain the metric system of weights and measures.

13. ATOMIC WEIGHTS.

It is recommended that the Atomic Weights adopted in the revision shall be based upon oxygen taken at 16 (o = 16), and in accordance with the latest available report of the International Committee on Atomic Weights.

14. PHYSICAL CONSTANTS.

It is recommended that official methods for taking physical constants shall be stated in the Pharmacopoeia, and these shall apply to all articles in which physical constants are officially used, unless otherwise specifically excepted.

15. STANDARD TEMPERATURE.

It is recommended that the standard temperature of 25° C. (77° F.) be retained in the revision (except for alcohol or in other special cases), and that an alcoholometric table be inserted in Part II, giving the percentage of alcohol at different temperatures.

16. COMPOUND PREPARATIONS.

It is recommended that the introduction of compound preparations be discouraged as far as possible.

17. PHARMACOGNOSTICAL DESCRIPTIONS.

It is recommended that with the description of a crude drug there be included brief, pharmacognostical descriptions, both macroscopic and microscopic where practicable, and, as a means of detecting adulteration, there shall be added a statement of the appearance of the distinctive structural elements in the powder, when examined microscopically.

18. POWDERED DRUGS.

It is recommended that powdered drugs be required to represent the entire drug unless specifically stated otherwise. Where the drug can be powdered without residue this should be required; in other cases the amount of allowable tailings, gruffs or residue should be determined and inserted in the text.

19. SOLUBILITIES.

It is recommended that the degree of solubility of official substances in various solvents be given as completely as practicable.

20. STERILIZATION.

It is recommended that there be included in the Pharmacopoeia a chapter on Sterilization.

21. COMMITTEE ON DRUG MARKETS.

It is recommended that the Committee of Revision be empowered to appoint a Special Committee to make an investigation of the quality of crude drugs in commerce, and that this Committee be especially instructed to endeavor to determine the proper limits of

variability, due to soil and climatic conditions, or collection, or handling, and to suggest such improvements as can be introduced in the collecting, marketing and preservation of crude drugs.

22. PUBLICITY.

It is recommended that the Committee of Revision make public for comment and criticism, an abstract of new descriptions and standards, and all important changes in preparations and standards proposed, before final adoption.

23. FORMULATION OF RULES.

In all matters not especially provided for by the "General Principles" adopted by the Convention, the Committee of Revision is empowered to formulate rules as it considers necessary.

24. DATE WHEN THE NEXT PHARMACOPOEIA BECOMES OFFICIAL.

It is recommended that the Committee of Revision print upon the title page of the next Pharmacopoeia a definite date, reasonably distant from the actual date of publication, announcing when the new Pharmacopoeia is intended to go into effect and supersede the preceding one.

25. SPANISH EDITION.

It is recommended that the Tenth Revision of the United States Pharmacopoeia be translated into the Spanish language and published.

26. SUPPLEMENT.

It is recommended that the Committee of Revision be authorized to prepare supplements to the Pharmacopoeia, or lists of admission or changes at any time they may deem such action desirable.

PERSONAL AND NEWS ITEMS.

Announcement has been made of the marriage, June 28, of **William Baker Day**, General Secretary of the American Pharmaceutical Association and Miss Marietta Lucile Carothers, daughter of Mr. and Mrs. J. H. Carothers, of Chicago.

The marriage of Miss Frances Dohme, daughter of **Ex-President A. R. L. Dohme**, A. Ph. A., to Edmund Wade Fairchilds, June 30, has been announced. Miss Adelyn Dohme, another daughter of Dr. Dohme, was recently married to Elias Breeskin.

The birthday of **Wilhelm Bodemann**, Recording Secretary of the C. V. D. A., was celebrated June 3, at the regular mid-week meeting of this organization, and that of another veteran member of our Association, **John Blocki**, on June 17.

The members of the Philadelphia Branch of the American Pharmaceutical Association and friends of **Prof. E. Fullerton Cook** tendered him a testimonial dinner at the City Club of Philadelphia on Friday evening, May 28, in honor of his being elected chairman of the U. S. P. Committee of Revision. The presence of Mrs. Cook and likewise the Rev. Cook and Mrs. Cook, father and mother of the guest of honor, added greatly to the sentiment and enjoyability of the occasion. Dr. Harvey W. Wiley, of Washington, D. C., and Dr. H. V. Arny, of New York City, were present.

The *Baltimore Sun* of June 13 has an interesting account of the activities of **Sergeant-Major H. W. Riess** of the Hospital Service, who retires to accept a position with the Public Health Service. In point of service he is the oldest non-commissioned officer, having 32 years to his credit.

Dr. Jacob Diner, recently Chairman of the Scientific Section, A. Ph. A., left June 20 for a four months' stay in the Philippines. While there he will undertake Governmental work in the study of preventive tropical medicine.

Dr. Edgar Fahs Smith has retired as provost of the University of Pennsylvania and will devote his time to chemical research.

The silver anniversary, as registrar of the Brooklyn College of Pharmacy, of **William L. Harloe**, was celebrated by a testimonial dinner at the Ormonde, in Brooklyn. Members of the faculty and friends attended, and a presentation of a gold watch was made to the guest of honor.

J. K. Lilly, president of Eli Lilly & Co., Indianapolis, Ind., has been elected chairman of the board of trustees of the Indianapolis Foundation, to succeed the late Charles Warren Fairbanks, former Vice-President of the United States. The Indianapolis Foundation is a community trust fund formed of the gifts and bequests of citizens of Indianapolis given for the betterment of the city and its people. It is a permanent organization.

Theodore Campbell, pharmacist, of Philadelphia, was renominated for election to the Pennsylvania Legislature; he has been representative for ten years.

Dr. Taylor Bogart, prominent in the affairs of the American Chemical Society, has been appointed member of the U. S. Tariff Commission, by President Wilson.

James W. Morrisson, head of the Fuller-Morrisson Co., wholesale druggists, has been elected president of the newly formed Chicago Drug and Chemical Association.

James S. Robinson, pharmacist of Memphis, Tenn., has been a member of the American Pharmaceutical Association for fifty-one years. The record of his prescription department shows that more than 1,500,000 prescriptions have been dispensed.

OBITUARY.

EDWIN McCURDY BORING.

Edwin M. Boring, who died at his home in Philadelphia June 22, 1920, was the son of John Dobbins Boring and Catherine McCurdy Boring, and was born at Lancaster, Penna., October 24, 1839. His boyhood days were spent in his home town, where he attended

EDWIN McCURDY BORING.

High School. Thereafter, about 1857, he worked for a time in Welchen's Drug Store in Lancaster, and for a few months in Philadelphia, after which he returned to Lancaster.

He responded to Lincoln's call for 75,000 volunteers, and entered the three months' service with the Lancaster Fencibles April 18, 1861. At the expiration of the three months he re-enlisted in Company E, 79th Pennsylvania Volunteers, first as private, and was commissioned First-Lieutenant June 19, 1864. He took part in a number of the great battles of the war, at Murfreesboro, Chickamauga, etc. He was mustered out July, 1865. As a member of the Executive Committee of the State of Pennsylvania Chickamauga-Chattanooga Battlefields Commission he assisted in the erection of the monument at Chickamauga Park to the 79th Pennsylvania Volunteers.

After the war, September 4, 1865, he came to Philadelphia, and entered the employ of Edward B. Garrigues, at 10th and Fairmount Ave. During the same year he matriculated at the Philadelphia College of Pharmacy and graduated in the class of 1867. During the summer of 1866 he studied botany under Dr. Horatio C. Wood, of the University of Pennsylvania, then located at 9th and Chestnut Sts. He was elected to the Board of Trustees of his Alma Mater in 1868, and continued a member until the time of his death. In 1868 he formed a partnership with Mr. Garrigues, which continued until the time of the latter's retirement in 1887, when Mr. Boring became the sole proprietor. He continued this business until last year, when he disposed of it to his successor.

The deceased became a member of the American Pharmaceutical Association in 1867, and attended many of the annual conventions, especially those of earlier years. He was one of the organizers of the Philadelphia Wholesale Drug Company, a member of the Pennsylvania State Pharmaceutical Association and the Philadelphia Association of Retail Druggists.

October 8, 1873, Mr. Boring married Elizabeth Garrigues Truman, who died February 18, 1907. They had four children, all of whom survive the deceased. They are Edwin Garrigues Boring, Professor of Experimental Psychology in Clark University, Worcester, Mass.; Alice Middleton Boring, for the past two years Assistant Professor of Biology at the Union Medical College, Peking, China, and now appointed Assistant Professor of Zoology at Wellesley College, Wellesley, Mass.; Katharine Boring Rondthaler, wife of Dr. Howard Rondthaler, President of Salem College, Winston-Salem, N. C.; and Lydia Truman Boring, Assistant in the Psychiatric

Clinic of the Home Service Section, S. E. Penna. Chapter, American Red Cross.

The deceased was a member of the Moravian Church, and took an active part in its affairs. As a citizen he stood for what is best in civic life; in the family his example as husband and father made for what is best in the home circle; his loyalty, sense of duty and obligation to pharmacy marked his life with success.

GEORGE STELLE CAMPBELL.

George Stelle Campbell died at his home in Millburn, N. J., June 23, 1920. He was born at New Brunswick, N. J., April 3, 1857. His earlier education was in the public schools of his home city, and he graduated from the High School in 1872. He served for several years as a clerk in Brooklyn, N. Y., and in 1880 entered into partnership with Theodore Sommers, of Millburn, and later purchased the interest of his partner.

Mr. Campbell took a great interest in municipal affairs, and for one term was a member of the New Jersey Assembly. He was affiliated with the Masonic bodies. Mr. Campbell joined the New Jersey Pharmaceutical Association in 1883, and served as its president in 1903. He joined the American Pharmaceutical Association in 1914.

Mrs. Campbell and two children survive the deceased.

SOCIETIES AND COLLEGES.

DRUG TRADE BOARD OF PUBLIC INFORMATION.

It was decided at the annual meeting of the Drug Trade Board of Public Information, convened in Atlantic City, June 30, to institute a news service to impart information of general interest to the public in connection with the progress of pharmacy and the drug business. The names of the delegates, and the organizations associated in this Board follow: American Pharmaceutical Association, R. P. Fischelis, Philadelphia; American Conference of Pharmaceutical Faculties, E. L. Newcomb, Minneapolis; National Association of Boards of Pharmacy, H. C. Christensen, Chicago; National Association of Retail Druggists, S. C. Henry, Chicago; National Wholesale Druggists' Association, C. H. Waterbury, New York; Proprietary Association of America, E. F. Kemp, Chicago; American Drug Manufacturers' Association, H. B. Mason, Detroit, and American Association of Pharmaceutical Chemists, B. L. Maltbie, Newark, N. J.

R. P. Fischelis, of Philadelphia, was chosen president, and C. H. Waterbury, of New York City, Secretary-Treasurer.

ARMY AND NAVY PHARMACISTS.

During the recent meeting of the American Pharmaceutical Association in Washington, the subject of Army and Navy pharmacists received much favorable attention. The Navy was represented by Lieutenant P. F. Dickens, who is assistant to Admiral Braisted, the Surgeon General, and was his personal appointment.

Dr. Ireland, Surgeon General of the Army, detailed Major A. P. Clark of his staff to tell the Association something of the plans which the Army is perfecting for commissioned pharmacists. The Committee on the Status of Pharmacists in the Government Service, consisting of Messrs. Cook, Beringer, Mayo, Eberle, and accompanied by the Secretary of the Council, Joseph W. England, and by Leonard A. Seltzer, called on Surgeon General Ireland and Surgeon General Braisted, and discussed the entire situation. It was also possible for this Committee to meet Admiral Washington, Chief of the Bureau of Navigation, and subsequently to have an interview with Secretary Daniels, of the Navy.

Several days later, members of the Executive Committee of the N. A. R. D., including Secretary Samuel C. Henry, Charles H. Huhn and Theo. C. Hagenow, also called upon the Surgeon Generals, and General Ireland and Admiral Braisted carefully reviewed the situation. The feeling expressed by everyone who has learned of the latest developments is one of gratification and approval.

In the Army, the plan proposed by General Ireland for the establishment of a Medical Administrative Corps has passed both the Senate and the House, as a part of the Wadsworth Reorganization Army Bill and is now in conference in joint committee. It is interesting to know that with the many criticisms of the Wadsworth Bill, this feature has never been questioned, and as the General Staff of the Army has also given their approval of the establishment of this Corps, it is reasonable to expect that when the Wadsworth Bill is

finally passed, the Medical Administrative Cerps will become a part of the law. Dr. Ireland has asked that pharmacists of military experience and of the highest technical training he selected for his assistance in the organization of the Pharmaceutical Section of this Corps. This officer, or possibly two officers, representing the several phases of pharmacy, would possibly be commissioned as a major in the Reserve Corps and then placed on active duty for the time necessary for organization.

Some additional details about the pharmacist's place in the new army will be of interest to every pharmacist. It will be in the reserve corps in peace time that pharmacy will have the greatest opportunity and the most attractive service. Here graduates of pharmacy who meet the other necessary requirements, including proper recommendation, and who have been approved by the proper officer in the Surgeon General's office, will be recommended for commissions as second lieutenants in the Reserve Corps, even though they have no military experience. It is understood that there will be about 1400 of these commissions available. The Medical Corps has secured for its training school, the old Indian school grounds at Carlisle, Pa., where training will be given in all sections of the corps, including the pharmaceutical division. Men who have been commissioned as second lieutenants, or with possibly a higher rating, due to experience in the World War, will be asked to take six weeks of training during the four years of enlistment. This training may be taken at one time or divided, and the school will be open throughout the year. As soon as an officer notifies the Department that he is ready to take the training, he will be placed on active duty and his pay start before leaving home. The pay of a second lieutenant is about $1700 per year.

In the Navy, the passage of the Darrow Bill is yet uncertain, but Secretary Daniels has agreed to assist in securing permanent commissions for the 79 lieutenants of the Hospital Corps who were commissioned during the war, and Admiral Washington promised the committees that he would not oppose such action. Secretary Daniels recommended that the Darrow Bill or similar legislation be introduced in the next Congress, if it is not passed at this time.

E. FULLERTON COOK,
Secretary.

SUMMARY OF THE PROCEEDINGS OF THE 1920 MEETING OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES.

The Twenty-first annual meeting of the American Conference of Pharmaceutical Faculties was held at the New Willard Hotel, Washington, D. C., on May 5–6, 1920. Delegates were in attendance from thirty-three member colleges located in twenty-five states. The President, Dr. Wortley F. Rudd, of the Medical College of Virginia School of Pharmacy, presided at all sessions.

After the roll call of delegates, Professor John Uri Lloyd, of Cincinnati, opened the meeting with a message of greeting from the American Pharmaceutical Association.

Dr. Rudd's presidential address was well worked out and cordially received, and it contained several recommendations which were adopted, as follows:

1. That the Conference take steps to secure an investigation and classification of the pharmacy schools of the United States.

2. That the Conference coöperate with the American Pharmaceutical Association and the National Association of Boards of Pharmacy to secure prerequisite laws in states which have not yet enacted such laws.

3. That the President, Secretary-Treasurer and Chairman of the Executive Committee shall act as a special committee to secure publicity for the work of the Conference.

4. That the President, Secretary-Treasurer and Chairman of the Executive Committee shall hold a meeting in advance of the annual meeting, at the expense of the Conference, if these officers deem such a preliminary meeting necessary.

5. That the minimum course leading to a degree from a member college in the Conference shall be three years, beginning with the class entering in 1925.

Dr. C. C. Pierce, Assistant Surgeon General of the United States Public Health Service, described the work being done by his department to educate the people of the United States on the seriousness of the menace from venereal diseases, and he asked for the cooperation of the members of the Conference in this work. After a lengthy discussion, it was unanimously voted to approve the campaign against venereal diseases and that the Conference will coöperate in this campaign in every way that circumstances governing its member colleges will permit.

The report of the Secretary-Treasurer, Dean Theodore J. Bradley, of the Massachusetts College of Pharmacy, showed that there were forty-five member colleges in the Conference. The cash receipts during the year were $1126.95 and the expenditures were $794.63. On April 30, 1920, there was a balance of $993.59 in the treasury.

Reports of the various standing and special committees were received as follows:

Executive Committee—Henry Kraemer, of Michigan, Chairman.

National Syllabus Committee—T. J. Bradley, of Massachusetts, Chairman.

Standing Committee on Higher Educational Standards—W. J. Teeters, of Iowa, Chairman.

Standing Committee on Faculties—Zada M. Cooper, of Iowa, Chairman.

Standing Committee on Curricula and Teaching Methods—C. B. Jordan, of Indiana, Chairman.

Standing Committee on Activities of Students and Alumni—R. A. Lyman, of Nebraska, Chairman.

Standing Committee on Uniform College Bulletins—C. O. Lee, of Indiana, Chairman.

Standing Committee on Relations of Pharmacy Schools and Other Professional Schools—E. F. Kelly, of Maryland, Chairman.

Standing Committee on Examination Questions—E. A. Ruddiman, of Tennessee, Chairman.

Standing Committee on Research—Albert Schneider, of Nebraska, Chairman.

Special Committee to Consider and Report on the Question of the Establishment of Two Classes of Pharmacists and Corresponding Courses in Colleges of Pharmacy—Jacob Diner, of New York, Chairman.

Special Committee to Work Out Methods of Presenting the Advantages of Pharmacy as a Calling to High School Students—J. A. Koch, of Pennsylvania, Chairman.

Special Committee to Prepare and Distribute Information on Pre-requisite Legislation—W. B. Day, of Illinois, Chairman.

All of these committee reports will be published in the proceedings of the Conference and several of them will appear in other publications.

The West Virginia University Course of Pharmacy was elected to membership in the Conference.

The following officers were elected for the ensuing year:

President, Wilber J. Teeters, of Iowa City, Iowa.

Vice-President, Washington H. Zeigler, of Charleston, South Carolina.

Secretary-Treasurer, Theodore J. Bradley, of Boston, Massachusetts.

Chairman of the Executive Committee, Rufus A. Lyman, of Lincoln, Nebraska.

Members of the Executive Committee, Julius A. Koch, of Pittsburgh, Pennsylvania, and Wortley F. Rudd, of Richmond, Virginia.

Member of the Syllabus Committee, 1920–1927, William C. Anderson, of Brooklyn, New York.

THEODORE J. BRADLEY,
Secretary.

THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

ABSTRACT OF SECRETARY H. C. CHRISTENSEN'S REPORT, CONVENTION OF 1920.

The year so far has shown a very satisfactory growth. Our receipts for the eight months is within two hundred dollars of the total amount taken in during the previous twelve months and amount to $13,290.

Thus far 815 reciprocal application blanks have been issued as against 810 for the twelve months' period between the 1918 and 1919 Conventions. Five hundred twenty-three reciprocal registrations have been reported to the Secretary's office since the last convention. Forty-eight blanks have been returned for various reasons and refunds made; leaving something like 250 to be reported. This apparently large number of outstanding applications may be accounted for mainly in two ways: Those not reported in by Board secretaries and those still pending before the various Boards or which have not been submitted by the applicant.

The number of reciprocal application blanks issued thus far indicate that reciprocity for pharmacists is growing in popularity. It is fair to assume that the number will increase year by year as reciprocal registration becomes better understood and more widely known. The war, furthermore, has given the young man the courage and craving for travel, so we may expect the coming pharmacist to migrate from one state to another more than ever.

I am confident that reciprocal registration is going to do much to equalize and stabilize the supply of pharmacists. While now practically every State can use more than its own number of registrants, the time will come

shortly when there will be a shortage in one state, and perhaps, an over-supply in another. This condition will promptly stimulate reciprocal registration as there will be no special bar to crossing a state line. That this will be beneficial to pharmacists, needs, I think, no argument.

There is another advantage that accrues from Reciprocal Registration. In order that pharmacists may receive the full benefits of reciprocity, States must maintain a standard of requirements equal to the requirements of the majority of the States in the Association. There should be no lagging behind in the forward movement of the requirements and Boards will feel a moral obligation to keep up as nearly as possible with the procession. This will tend to elevate the standards of our profession, generally. As an evidence of this, fifteen States have already adopted college of pharmacy graduation requirements, others will follow shortly. Fully one-half of the States have adopted two years of high school requirements for entrance to examination as registered pharmacist, a few full high school graduation, and the majority of the remaining, one year. All are making sincere efforts to increase to full four years of high school work, and college of pharmacy graduation not later than 1923. A few Boards, it is true, have not been able, on account of state laws or otherwise, to make a start with high school requirements, but a genuine effort is being made in this direction by them. No Board member likes to think of his State falling behind, hence the N. A. B. P. is an educational institution, tending to keep alive the question of higher standards of requirements and to fan the spark of desire to the flame of action.

The States should keep abreast like a well-trained squad of men on march, for those that lag behind while others go on, will come to a point where their registrants will be debarred from reciprocal registration in the progressive States. Prerequisite requirements, both college of pharmacy and high school, are not retroactive in their action as applying to reciprocity; however, an applicant for reciprocity must have had the qualifications, at the time of his registration in the state from which he applies, that would at that time have entitled him to take an examination in the State in which he may later apply for reciprocal registration. To illustrate: Supposing that New York, say in 1925, require three years of college work; Illinois, let us say, requires but two. Now a candidate might be registered in Illinois in 1925 on two years of college work and the following year would seek reciprocity with New York. New York would refuse him because at the time of his registration in Illinois he did not have the qualifications which would have admitted him to a New York examination.

Or, let us suppose that on July 1, 1918, Virginia adopted two years of high school as a requirement for entrance to examination for full registered pharmacist, and that the District of Columbia did not adopt such a requirement either at that time or since. John Doe, not having had two years of high school, registered by examination in the District of Columbia shortly after July 1, 1918, and later applied for reciprocal registration in Virginia. He would not be eligible, for the reason that at the time of registration in the District of Columbia he could not have qualified for examination in Virginia.

We have now a well equipped secretary's office with suitable fixtures, including an excellent filing system and a good reference library, etc. On January first it became necessary to employ another office assistant to aid with the stenographic, filing and other work. At the present rate of increase, it will no doubt become necessary to further increase our facilities to handle our work in an efficient manner.

We have in our office a great mass of information that is valuable to every officer and committee chairman of the Association, and we gladly supply this on request. A pressing invitation is extended to the officers of the Association and the members to visit the office during the year and go over what we have, and make use of the collected data and information. This would give them a more intimate view of their work and the work of the Association than could be obtained in any other way.

Perhaps the most gratifying feature of the year has been the general recognition accorded to the National Association of Boards of Pharmacy by other pharmaceutical bodies. Also, that individual states, officers of State pharmaceutical associations, etc., are using the N. A. B. P. more and more as a source of information and as a guide on the questions that arise regarding educational and legislative matters. We hope and believe that the time is fast approaching when the National Association of Boards of Pharmacy will be a great

clearing house for the information of Boards and members on questions pertaining to examinations and legislation. With the changing personnel in Boards, which is quite constant when we consider all the members of the Association, it seems highly desirable that there should be a central office to which questions can be referred and to which the members may feel free to send questions and have them answered. In my opinion, the National Association of Boards of Pharmacy should strive to be in a position to exercise this function.

In conclusion I want to add—and I am speaking now from my six years' experience—that the plan proposed of dividing the United States into eight districts with a vice-chairman in each district to act as a divisional officer, would enable the Association to carry along its work more expeditiously and efficiently.

SIXTH NATIONAL EXPOSITION OF CHEMICAL INDUSTRIES.

The Sixth National Exposition of Chemical Industries will open in Grand Central Palace, New York, September 20th, and continue until 25th, inclusive. The expansion in the industry, as shown by the increased number of exhibitors, necessitates the use of four floors in the Palace. Total applications for space up to June 30, were 358, which is a new record. In Chicago last year there were 351 exhibitors, while at the previous New York show in 1918, the number was 334. Considering the fact that the first exposition was staged in 1915 and that only 83 exhibits were in place, the growth of the exposition is really remarkable. The increase in the attendance is also evidence of the interest that has been aroused. In 1915 only 63,000 visitors attended the show, while in Chicago last year the records showed that more than 111,000 had seen the exposition.

During and since the war chemistry has come more and more in contact with the great American industries. In fact recently the chemical industry has been referred to as "the partner of big business." Manufacturers are realizing on the money that has been put into research and the returns as the experiments progress promise even more wonderful dividends. There is now no doubt but that much responsibility rests on chemistry to bring the activities of the nation back to their accustomed channels.

NEW ORLEANS DRUG CLUB.

A Gurd Club Banquet was held June 24 under the auspices of the New Orleans Drug Club. It was a most enjoyable affair and largely attended by the members of the drug trade of the next A. Ph. A. Convention City. Wives and daughters of the members graced the occasion. Robert F. Grace reports the accession of many Louisiana druggists to the Association.

RESEARCH CHAIR IN CORNELL PROVIDED FOR BY AN ENDOWMENT.

A gift of $500,000 by August Heckscher, of New York City, for the endowment of a chair of research in Cornell University, was announced by Jacob Gould Schurman, president, at the University's fifty-second commencement. The income of the fund to be created by Mr. Heckscher's gift will be used to maintain professorships of research and to provide facilities for scientific work.

ANNUAL MEETING OF JOHN BARTRAM ASSOCIATION.

John Bartram, "seventh," direct descendant of the founder of the society, was present at the annual (June) meeting of the Association. George B. Kaiser, Dr. A. W. Miller, A. Ph. A. member and also of the Society, conducted the visitors about the grounds, and gave them an historical account of some of the trees, and places of interest.

THE PHARMACIST AND THE LAW.

TIME FOR TAX READJUSTMENT.

We are quoting from a recent editorial in the *New York Commercial.*

"Both the excess profits and the income taxes contribute to the high cost of living and the general extravagance. Particularly is this true of the excess profits tax, which is an invitation to pad costs of production and to all kinds of extravagance on the theory that otherwise the Government would get the money. On the other hand, state and municipal bonds being tax exempt, because of constitutional inhibitions, are in tremendous demand by those not in active business by which to escape surtaxes. Those who are in active business are taxed above an arbitrary figure, which may or may not represent a fair return on their operations.

"The thought is gradually making its way in the public mind that the best remedy for our taxation dilemma is to reduce it to its lowest terms—a simplification which will spread itself evenly over the whole people. This is sought to be accomplished by means of a sales tax, say of 1 percent. This is easily collectable and is levied upon the outgo rather than the income, and would at once place a check upon extravagance. There will, of course, have to be a normal income tax, otherwise absentee landlords and owners of securities would escape taxation.

"Members of Congress are giving this very serious thought. At first sight it is apt to raise objections, but upon closer study the idea appeals very forcibly to clear thinkers. It is worth considerable thought and study between now and the time Congress meets, so that if the public mind is made up on it, it can be passed very quickly, as a simple measure requiring comparatively little machinery for its collection."

TRADE-MARKED PHARMACEUTICALS RELIEVED FROM PAYING TAXES PROVIDED NOT SUBJECT TO TAX UNDER OTHER PROVISIONS OF SECTION 907, WAR REVENUE ACT.

A ruling of the San Antonio Revenue Office held trade-marked pharmaceuticals subject to tax, even though dispensed in prescriptions. Mr. Crounse, attorney for National Wholesale Druggists' Association, presented the unreasonableness of the proposition to the U. S. Revenue Department, in part, as follows:

"A literal interpretation of this ruling would result in the imposition of taxes far in excess of those contemplated by Congress, for nothing less than a one-cent stamp would be employed to denote the use of the smallest possible quantity of an identified preparation; hence the contents of a package costing the retailer one dollar or less might easily furnish the basis for taxes aggregating 250, 500, or even 600 percent.

"Not only is a heavy additional burden thus placed upon the sick, but retail pharmacists are afforded a strong inducement—either to save their patrons the additional cost of the tax or to increase their own profits—to employ inferior medicinal products made by unknown manufacturers, for it is a general practice among reputable producers in the drug trade to employ identification marks in addition to their firm names on all their labels.

"The acting solicitor of the U. S. Revenue Department recognized the illegality of the action of the San Antonio officials, and upon his recommendation the Commissioner of Internal Revenue forwarded to the collector at San Antonio a peremptory order instructing him to suspend the rulings taxing prescriptions and to cease collecting retroactive taxes."

ALCOHOL SOLUTIONS WITH LESS THAN EIGHT GRAMS OF PEPSIN CLASSED AS "INTOXICATING LIQUORS."

The Federal Prohibition Commissioner has issued the following instructions to regional prohibition directors and others concerned, relative to alcoholic preparations of pepsin:

You are informed that, in accordance with the provisions of regulations 60, it has been decided to issue the following ruling relative to alcoholic solutions whose sole medication is pepsin or a similar principle. All such preparations containing less than eight (8) grains of pepsin to the fluidounce will be classed as intoxicating liquors, and the manufacture and sale of same must be in accordance with the regulations for such intoxicating liquors. As pepsin is known to lose its efficiency in time, it will be necessary that persons holding in stock preparations supposed to contain in excess of eight (8) grains of pepsin to the fluidounce assure themselves that, at the time of sale, the preparation does in fact contain the active properties of such an amount of pepsin. If upon analysis it is found that a preparation purporting to contain eight (8) grains or more of pepsin in each fluidounce does not in fact contain such an amount of pepsin, the preparation will be held to be an intoxicating liquor whether proof can be obtained that eight (8) grains of active pepsin were introduced at the time of manufacture or not.

THE COLLECTION OF TAX ON FOUNTAIN BEVERAGES.

The soft drink tax of 1 cent for each 10 cents or fraction thereof of the amount paid applies to all sales of soft drinks, ice cream, ice cream sundaes and similar articles of food and drink in an ice cream parlor or similar place of business if sold for consumption in or in proximity to the place of sale. All sales from soda fountains of the articles mentioned are taxable, regardless of the nature of the place of business in which the fountain is located. In these two instances the tax ap-

plies whether or not the sale is accompanied by the purchase of substantial articles of food or drink as part of a meal.

If the sale is made at a hotel, restaurant, cafeteria, lunch room or club house as part of a meal, and the articles are not sold from a soda fountain, no tax is due. Sales at such places when made separately and not as part of a meal are taxable.

If several articles are purchased at the same time, the total price paid is the unit for computing the tax. Thus, if a purchaser orders two sodas each selling for 15 cents, the total tax is 3 cents, and not 4 cents.

Regulations governing the collection of the soft drink tax require that daily records be kept, showing the number of sales and the tax thereon. In case the vendor does not use an adequate cash register or check system from which records may be kept the regulations require that a separate receptacle shall be used to retain the tax collections.

Vendors are required to make on or before the last day of the month return and payment of the tax collected during the preceding month. The penalty for failure to make a return and pay on time is a fine of not more than $1,000. For wilful refusal to truly account for and pay over the tax, the penalty is a fine of not more than $10,000, or one year's imprisonment, or both.

TO LIBERALIZE ALCOHOL REGULATIONS.

A delegation of business men and representatives of associations appeared before the Internal Revenue Department in Washington, June 17 and presented arguments for the creation in the Internal Revenue Bureau of a special organization to supervise the operations of legitimate users of industrial or non-beverage alcohol, the head of such organization to be a man familiar with industrial processes and to some extent with the demands of chemistry as involved in the research laboratory work of manufacturing establishments.

Quoting the *Paint, Oil and Drug Reporter*, another point strongly emphasized was the necessity for simplifying the present regulations of the Internal Revenue Bureau under the prohibition law, and especially the routine prescribed thereunder for the procurement of alcohol by manufacturers of established reputation. Such manufacturers are now subject to the same petty annoyances, delays and embarrassments as are visited upon the most suspicious characters who are seeking to exploit the prohibition law through the manufacture and sale at exorbitant prices of intoxicating liquors thinly disguised as legitimate products of the drug and allied industries.

"It was also urged with great vigor that it is impossible for the staff of prohibition agents now engaged in detecting violations of the Volstead Act through the diversion of alcoholic products to beverage uses, to give adequate attention to the interests of the many thousand legitimate manufacturers who use alcohol in the production of their goods. These men, it was pointed out, are overwhelmed with their routine work and possess absolutely no technical knowledge that would enable them to appreciate the great importance of the industrial use of non-beverage spirits."

S. L. Hilton, who represented the American Pharmaceutical Association, in writing of this meeting, states that the conditions existing relative to the production of alcohol since the enactment of the prohibition law shows a reduction of 53 percent in manufacture, due to many distilleries going out of business. It was further pointed out that if under present conditions war was to start there would not be enough alcohol produced to supply the demand for munitions. A representative, the head of the Chemical Warfare Service, was present, and discussed this feature. It was pointed out also that alcohol was not a beverage under Section 3, and should not be so considered, that the regulations should not be so drastic and hamper those requiring alcohol. The sale of alcohol should be looked after and enforced by persons who are familiar with the uses and necessity for alcohol.

Mr. Hilton discussed the question from a purely medical and pharmaceutical standpoint: That the use of alcohol in the manufacture of medicinal preparations was necessary; the present day medicinal preparations were the result of centuries of development, that the knowledge of their physiological effects is based on medicinal products made with alcohol; that nothing so far had been discovered to take the place of alcohol; many solvents have been tried, but none proved satisfactory; that if something was found, it would be necessary, before it could be generally used, to make thousands of experiments on animals, then on human beings, before adoption, otherwise the present system of medicine would fall.

He also referred to the difficulties in pur-

chasing alcohol, and that the classification of certain U. S. P. and N. F. preparations were causing trouble; that many retail pharmacists could not afford to obtain permits and give bonds to purchase. Even though the latter conditions did not obtain it would be of no avail, as many manufacturers had discontinued these preparations owing to the regulations and the difficulties in supplying the demand under the regulations, and if the retail pharmacist could not obtain alcohol it would be impossible for him to manufacture them. Mr. Hilton contended that it was clearly the physician's province to indicate what he desired in each case, and that of pharmacists to fill prescriptions. The products referred to were vehicles and not generally used otherwise.

It was suggested that if the Commissioner invited the Conference to advise with him they would be willing to name a committee to assist the Commissioner along the lines indicated, which no doubt would result in better understanding, and eliminate many of the present troubles.

On account of sickness the Commissioner was unable to attend, but stenographers reported the meeting and the matter will be placed in his hands for consideration and action.

BOOK NOTICES AND REVIEWS

Treatise on General Industrial Inorganic Chemistry, by Dr. Ettore Molinari, 3d Revised and Amplified Italian Edition. Translated by Dr. Ernest Feilmann, B.Sc., Ph.D., F.I.C. 280 illustrations, 1 chromolithographic plate, 2 photographic plates. P. Blakiston's Son & Co. $12.00.

There are many industrial chemistries available at the present time, but this new edition of Molinari's work covering the inorganic field will be welcomed by those with whom the previous edition found favor, on account of its conciseness, its thoroughness, its large number of illustrations and its statistics and cost figures.

The new edition is increased over the last one by 186 pages of text and 40 illustrations. The statistics, which in the former edition included figures up to 1909, have in the new edition been brought up to 1915 in some instances, although there are many chapters in which the latest figures are those of 1911.

Among the particular features of the new book are a rearrangement of the subject matter under the nitrogen group and the introduction of a new section on the hydrogenated and halogenated nitrogen derivatives.

Synthetic nitric acid is given a section of 11 pages containing a number of new illustrations and much valuable matter concerning statistics and costs.

The space devoted to sulphuric acid has also been increased and there have been added detailed illustrations of the Gay Lussac Towers which to-day are built of lead and up to 40 feet in height.

The section on chemical fertilizers, too, has been amplified and a number of new processes have been described and illustrated.

Under Iodine reference is made to the utilization of the kelp beds along the Pacific coast of the United States, and these are also referred to in connection with the subject of the potassium salts, which section also contains much new material.

There are, however, several disappointing features in the new work. One is the failure to mention the new sources and uses of helium. Another is the failure to discuss the hydrogen ion concentration subject in connection with the use of the hydrogen electrode and the potentiometer, nor is any detailed explanation given of the meaning of the expression "PH" now so frequently met with in current literature.

No mention either is made of the Carrel-Dakin Solution under any of the headings where it might have been discussed, nor is it mentioned in the index.

The most discouraging part of the new edition, however, is the index. In the former edition the indexing was done very thoroughly and many cross references were given, the entire index occupying 31 pages. In this new edition, which has been increased between 25 and 30 percent in size over the old one, the index occupies but 17 pages, and as might be expected, is very incomplete.

The book is one which, in spite of this latter drawback, should be in every library of up-to-date practical works upon chemical subjects.

C. H. LaWall.

The Microbiology and Microanalysis of Foods. By Albert Schneider, M. D., Ph.D., Professor of Pharmacognosy at the College of Pharmacy of the University of Nebraska; etc. 131 illustrations. P. Blakiston's Son & Co. $3.50.

This volume is intended to present a practical working basis for ascertaining the decomposition limits of foods and beverages suitable for human consumption, by means of the direct methods of microanalysis, and is addressed to dietitians and food examiners in the army and navy and to analysts in food laboratories of all kinds. It will serve nicely in colleges of pharmacy as a test and laboratory guide for students qualifying as analysts in food and drug laboratories.

The text deals first with the cause and nature of decomposition changes in food, the principal groups of organisms concerned in food, spoilage and subdued and retarded food decompositions. Secondly, it discusses foods especially liable to be harmful or dangerous and food substances not likely to undergo microbic decomposition. Thirdly, is considered general and special microanalytical methods and food analysis in the field, describing the necessary equipment, the direct microscopical examination and special methods of testing water, milk, flour and meals, meats, eggs, butter and substitutes, tomato products, canned foods, dried foods, pastes, etc. The fourth division of the book covers the microanalytical rating of food products and legal standards of purity. Finally is found a diet table, references, and a general index.

As a whole the volume is well written, carefully arranged as to sequence of subjects and really interesting. It covers in a concise manner the many phases of a very widely developed subject. In a sense it is not highly technical, for the author endeavors to avoid the extensive use of technical and scientific terms and to make his text easily understood by those without a wide scientific or technical training. On the other hand, the text is not really comprehended by one who does not already possess an extensive knowledge of bacteriology, chemistry, dietetics, etc., and its practical value is slight to those who have had no previous training in the technic of microscopy, chemistry, physics and the botany and zoölogy of the lower forms of life.

This book possesses the same disadvantages as do many works of a popular nature covering a wide field of scientific knowledge, in that statements of fact are occasionally so brief and without adequate explanation as hardly to be understood; working directions for some of the tests and processes are so concise as to be valueless to one not already acquainted with the test or process and the endeavor to cover a wide field in such limited space prevents the development of all the finer qualities of those works in which the author's researches are fully presented.

The book is well printed on good paper, though a rather large number of errors due to poor proof-reading is found.

E. N. GATHERCOAL.

PUBLICATIONS RECEIVED.

Lists and references to the Works and Scientific Investigations of M. Emile Bourquelot, Member of the Academy of Medicine, Professor of Galenical Pharmacy of the Superior School of Pharmacy in Paris, Pharmacist and Chief of the Hospital Laënnec. In two parts, each of upwards of 50 pages, and published in 1911 and 1917.

Schedule of Antidotes for Poisons. Issued by authority of the Pharmacy Law of the State of New Jersey, 1920. The compilation is a useful one and contains antidotes for 105 poisons. The application of the antidotes for other poisons than those listed is also referred to. It is a useful pamphlet, not only for the druggists of New Jersey, but for all druggists.

Souvenir Fiftieth Anniversary Meeting of the New Jersey Pharmaceutical Association, containing halftone reproductions of all the ex-Presidents of the New Jersey Pharmaceutical Association, with brief biographical sketches of each, the Code of Ethics, and an historical sketch of the Association. The Foreword is by Prof. John Uri Lloyd.

Proceedings of the Maryland Pharmaceutical Association of the meeting held at Ocean City, Md., June 25–28, 1919, containing the minutes of the 37th Annual Meeting, list of members, etc.

University Bulletin of the University of Michigan College of Pharmacy, containing also the announcement for 1920–1921.

Coal Tar Colors in Drug Products, Probable Reasons Why Colors Came Into Use, Vegetable Colors Usually Used, a Selection of Colors Which May be Used, by George E. Ewe; a reprint from the article in the *Druggists' Circular* of June, 1920.

The Selection of Kieselguhr for the Filtration of Serums, by George E. Ewe; a reprint from the *Journal of Laboratory and Clinical Medicine,* Vol. V, No. 8, May, 1920.

NEW PUBLICATIONS

Chemical Theory: Elementary Chemical Theory and Calculations. Joseph Knox. 2nd Ed. 8vo., 109 pp. Gurney & Jackson, London.

Chemistry: Applied Chemistry; A Practical Handbook for Students of Household Science and Public Health. C. K. Tinkler and Helen Masters. Vol. 1, 8vo. Price, 12s. 6d. C. Lockwood & Son, London.

Coal-tars and Their Derivatives. G. Malatesta. Translated from the First Italian Edition, with revision, corrections and additions by the author. 8vo., 530 pp. Price, 21s. E. & F. N. Spon, Ltd., London.

Cosmetics: A Handbook of the Manufacture, Employment, and Testing of All Cosmetic Materials and Cosmetic Specialties with Numerous Recipes. Theodor Koller. Translated from the German. 3rd English Edition. 8 vo., 264 pp. Price, 8s. 6d. Scott, Greenwood & Son, London.

Volatile Oils. E. Gildemeister. Translated by Edward Kremers. 2 Vols. 2nd Ed., 8 vo. Price, $7.50 each. John Wiley & Sons., Inc., New York.

Pathogenic Microörganisms. A Practical Manual for Students, Physicians and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Anna Wessels Williams, M.D., Assistant Director of the Bureau of Laboratories of the Department of Health. Assisted by Charles Krumwiede, Jr., M.D., Assistant Director of the Bureau of Laboratories. Seventh edition. Cloth. Price, $6. 786 pp. with 223 illustrations. Philadelphia: Lea & Febiger, 1920.

Inorganic Chemical Synonyms and Other Useful Chemical Data. Elton R. Darling, M.S., Ph.D. D. Van Nostrand Company, New York.

Colloids: The Use of Colloids in Health and Disease. A. B. Searle. 120 pp. Price, 8s. Constable & Co., Ltd., London.

Experimental Organic Chemistry. By Augustus P. West, Professor of Chemistry, University of the Philippines. Illustrated with drawings and diagrams, 6x8 1/4 inches. 469 pp. Cloth. Yonkers-on-Hudson, New York. World Book Company.

Laboratory Manual of Pharmacology, Including Materia Medica, Pharmacopaedics and Pharmacodynamics. By A. D. Bush, B.Sc., M.D., Professor of Pharmacology, University of North Dakota. Cloth. Price, $3.50 net. 251 pp., with illustrations. F. A. Davis Company, Philadelphia, 1919.

A Manual of Chemistry, theoretical and practical, inorganic and organic; adapted to the requirements of students of medicine. By Arthur P. Luff, M.D., B.Sc. Lond., F.R.C.P. F.I.C., etc., and Hugh C. H. Candy, B.A., B.Sc. Lond., F.I.C., etc. With illustrations. Sixth edition, enlarged. 4 1/2x6 1/2 inches, 745 pp, Cloth. Chicago: Chicago Medical Book Co.

The Outlook for Research and Invention, with an Appendix of Problems Awaiting Solution. Nevil Monroe Hopkins, M.Sc., Ph.D., Experimental and Research Engineer, Fellow American Institute of Electrical Engineers, Member American Society of Mechanical Engineers, Major Ordnance Department, Technical Research U. S. A., Assistant Professor The George Washington University, Washington, D. C. D. Van Nostrand Company, New York.

Industrial Chemistry, a Manual for the Student and Manufacturer. Edited by Allen Rogers, in charge of Industrial Chemistry, Pratt Institute, Brooklyn, N. Y. At one time Major Chief Industrial Relations Branch, U. S. Army. D. Van Nostrand Company, New York.

AMERICAN SYNTHETIC CAMPHOR.

To combat the Japanese camphor monopoly, three large chemical companies in the United States, it has been announced by the American Chemical Society, have begun the extensive manufacturing of synthetic camphor from turpentine. This step has been taken because the supply of camphor allotted to this country by the Japanese Government is deemed inadequate and the price too high.

Although it is improbable that turpentine will ever come down to the pre-war prices, evidently the chemical manufacturers, contemplating the manufacture of camphor, believe that the price will afford them a margin of profit. Even if the manufacturing chemists referred to will not be able to undersell the Japanese product, the Japanese monopoly will come to better terms and thereby improve the market. Of course, our hope is that the venture will be successful in every respect.